MAY, 1935

American FRUIT GROWER

THE NATIONAL FRUIT MAGAZINE

In this issue

PROFITABLE TIPS on Successful Marketing

Tree Growth and Production as Related to Orchard Practices

Commercial BLUEBERRY Culture

ALTERNATE BEARING and Its Relation to Orchard Culture

WATCH For the June DIRECTORY NUMBER

ALSO

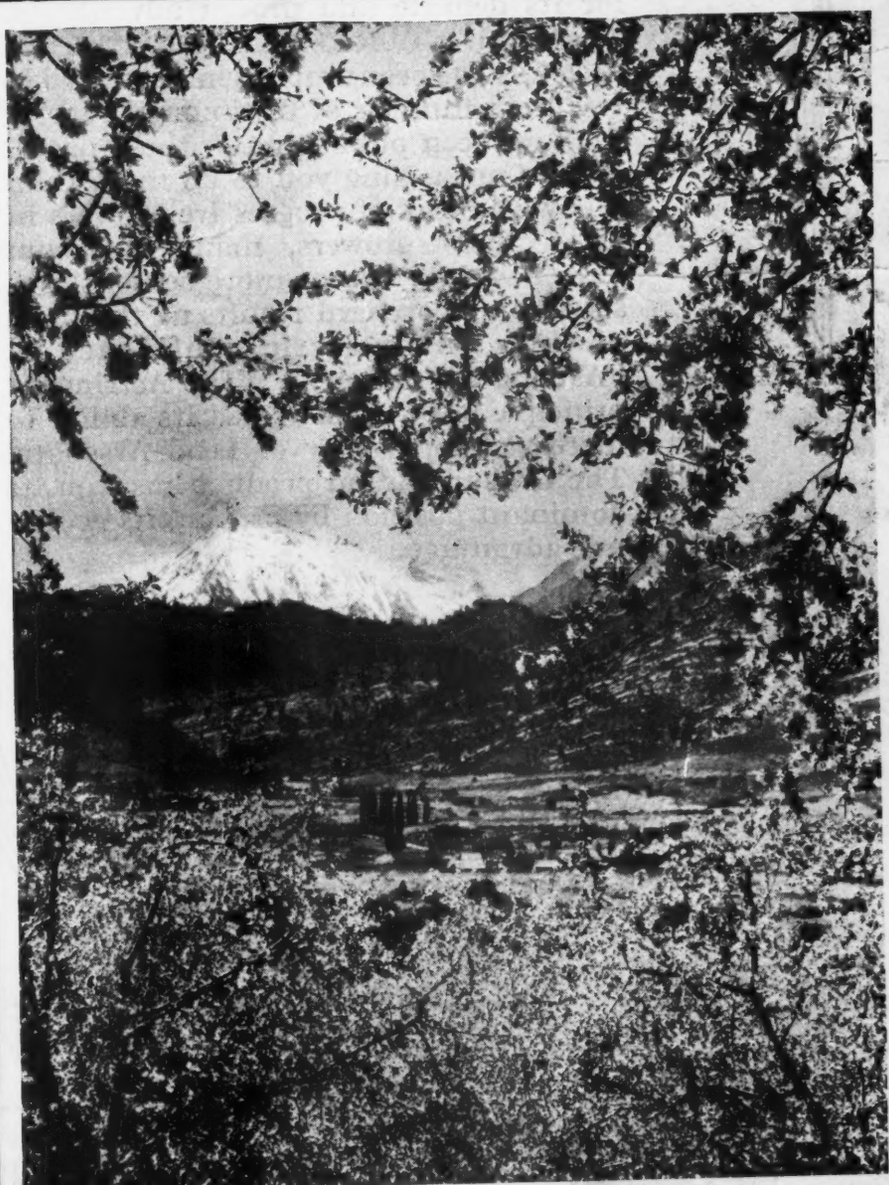
Nationwide News

State Horticultural News

Heard at the Conventions

American Pomology

"Every Grower's" Page



VALE OF CASHMERE—See Page 29.

Another BIG YEAR for "Astringent Lead"

FOR YOUR early season cover sprays you will want to rely on Orchard Brand "Astringent" Arsenate of Lead for its definite and proven advantages. That it gives QUICKER KILL—CONSISTENT RESULTS has been amply demonstrated in the great number of testimonial reports we have been publishing in these pages. We are not asking you to do more than follow the lead of progressive growers in all sections—growers, many of whom have now had two or more seasons' observation of orchard results as the basis of their enthusiastic confidence in "Astringent" Lead . . . The Astringent principle has demonstrated its ability to increase the toxicity of Lead Arsenate. The Orchard Brand product has won its dominant position by proving its economic advantage.

Watch for next month's announcement of an Orchard Brand Zinc Arsenical for second brood cover spray applications.

ORCHARD BRAND
REG. U.S. PAT. OFF.
SPRAYS AND DUSTS

Other ORCHARD BRAND Sprays and Dusts for Every Grower's Need

"Astringent" Arsenate of Lead
Standard Arsenate of Lead
Calcium Arsenate
Arsenite of Zinc
Zinc Arsenical (Late Covers)
Paris Green
Bordeaux Mixture
"Dritomic" Sulphur
"Apple Dritomic" Sulphur
Paradichlorobenzene
Nicotine Sulphate (40% Nicotine)
X-13 (Pyrethrum Extract)
Fungi (Sulphur) Dust
90/10, 85/15 and other Sulphur-Arsenical Dusts
Bordeaux-Arsenical Dust
Copper Lime Dusts
Rotenone Dust

GENERAL CHEMICAL COMPANY...40 Rector St., New York
also: ATLANTA, BALTIMORE, BOSTON, BUFFALO, CHARLOTTE, CHICAGO, CLEVELAND, DENVER, KANSAS CITY, LOS ANGELES, MINNEAPOLIS, MONTEZUMA (GA.) PHILADELPHIA, PITTSBURGH, PROVIDENCE, SAN FRANCISCO, SEATTLE, ST. LOUIS

Please send me a copy of the new edition of "Cash Crops."

NAME *and* ADDRESS

AF

1935 . . . A STILL BIGGER YEAR FOR "ASTRINGENT" LEAD!

Nation Wide News

State and national marketing specialists are finding that more and more consumers are asking for apple varieties of high quality and appearance, such as McIntosh, Northern Spy and Delicious. Less demand is noted for apples that do not look well and are poor in quality. The result is that planters everywhere are not only growing the varieties which are best adapted to the climate of their region, but those varieties of superior appearance and quality. Even color is of less importance than the other factors which make for an attractive appearance.

▼ ▼ ▼

In spite of large reduction in the citrus crop by Jack Frost, amounting to at least 25 per cent in the Florida orange crop alone, the combined U.S. production of oranges and grapefruit is actually larger this year than last. The Florida grapefruit crop is forecast at 11,000,000 boxes compared with 10,700,000 boxes a year ago, while the California orange crop promises to be over 40,000,000 boxes compared with 28,430,000 boxes last year.

▼ ▼ ▼

A simple, inexpensive, wind-driven fan to circulate the air within railway refrigerator cars promises to cut losses of fresh fruit and vegetables by maintaining more uniform temperatures both in summer and winter. The device, developed by officials of the U.S.D.A., has been granted a public service patent and will be of untold value to producers, shippers, railroads and consumers. The fans are driven by small "windmills" which operate in as low as a four or five-mile wind, and hold promise for use on storage houses.

▼ ▼ ▼

A significant increase of over 200 per cent in the sales and consumption of apples is reported by Karl F. Reiniger, local grocer of Cedar Rapids, Iowa, as the result of a well planned local advertising campaign. The sales plan embodies the use of specially made paper sacks of various sizes enabling purchasers to easily take home any convenient amount of bulk apples.

▼ ▼ ▼

The Arkansas and Missouri strawberry crop for 1935 will be the smallest in the history of the industry in that important district. Last year's drought and extreme heat killed so many of the plants and damaged so many others that there is less than

40 per cent of last year's acreage left, with the remaining stands so poor that hardly a 15 to 20 per cent production can be expected under normal growing conditions.

▼ ▼ ▼

The largest d'Anjou pear orchard in the world is owned by the Mount Adams Orchard Co. at Husum, Wash. The 1934 pack-out was 80,000 boxes.

▼ ▼ ▼

The Minnesota Fruit Breeding Farm had 5,800 apple seedlings in bearing in 1933, from which to make a selection of superior varieties for propagation. New, hardy, early-maturing varieties are constantly in demand by northern planters.

▼ ▼ ▼

California growers of almonds are trying to save the crop of the Pacific Coast, which is being endangered now by a pending reciprocal tariff with Spain, which would admit large quantities of this nut. As Spain's production costs are very low, it would be impossible for the Pacific Coast to compete with foreign importations.

▼ ▼ ▼

Much support is being urged for a bill pending in Congress "to provide for further development of co-operative agricultural extension work and more complete endowment and support of land-grant colleges." As the federal government has turned to the Extension Service of the state agricultural colleges to co-operate in many of the emergency programs, there has resulted a great overload upon the members of these state staffs, more than they can be expected to permanently bear.

▼ ▼ ▼

Some of the Mexican varieties of avocado are frost resistant and are being planted in northern California, in the Gulf states, and to a small extent in Washington and Oregon. A small fruit is produced which is excellent for salads.

▼ ▼ ▼

During February and March of this year, more than 100,000 dead, diseased and injured fruit trees have been cut down and removed from the orchards of seven New York counties. A corps of nearly 1000 relief workers did the job, while the wood was distributed among the needy of those same areas.

▼ ▼ ▼

Apricot "spread" is a new fruit by-product being manufactured in California and shipped to the East in large quantities for toast, waffles, sandwiches, and cake filling.

Vol. 55

American FRUIT GROWER

No. 5

MAY (Title Registered in U.S. Patent Office) 1935

CONTENTS

Nation Wide News 3
Watch for the June DIRECTORY NUMBER .. 5
A Pictorial Review of the Fruit World 6
Profitable Tips on Successful Marketing 7
By George E. Walker
Tree Growth and Production as Related to Orchard Practices 8
By John T. Bregger
Commercial Blueberry Culture 9
By Stanley Johnston
Alternate Bearing and Its Relation to Orchard Culture 10
By F. N. Fagan
On Top of the World in Doniphan County, Kansas 11
By J. S. Brazelton
American Pomology 12
A Page Conducted in the Interests of the American Pomological Society
Heard at the Conventions 13
By John T. Bregger
State Horticultural News 16
May in Our Gardens 20
By Mary Lee Adams
Seasonable Fashions 20
Be Sure to Catch the Early Worm 21
California Swings to Artificial Fruit Drying 23
Prize Winners in Recent Nut Contest 24
Macoun Apple Attracting Favorable Attention 26
Every Grower's Page 28
By T. J. Talbert
From Vale of Cashmere Comes a New Use for Apples 29

AMERICAN FRUIT GROWER
Published Monthly by
AMERICAN FRUIT GROWER PUBLISHING CO.
1370 Ontario St., Cleveland, O.

SUBSCRIPTION RATES
Domestic, Except Cleveland, 3 years $1.00. 1 yr. 50c. Cleveland and foreign (except Canada) $1.00 per year. Canada (including tax) $1.50 per year. Entered as second-class matter at Post Office at Cleveland, Ohio, under the Act of March 3, 1879. Additional entry at Mount Morris, Illinois.

E. G. K. MEISTER
Publisher

EDITORIAL STAFF
Mary Lee Adams - John T. Bregger - Benjamin Wallace Douglas - Dean Halliday - T. J. Talbert

CHICAGO REPRESENTATIVES
J. C. BILLINGSLEA CO.,
123 W. Madison St. Phone—Central 0465

ROGER FISON, EASTERN MGR.,
280 Madison Ave., Room 1110, New York
Phone—Caledonia 5-0738

Watch for the June DIRECTORY NUMBER

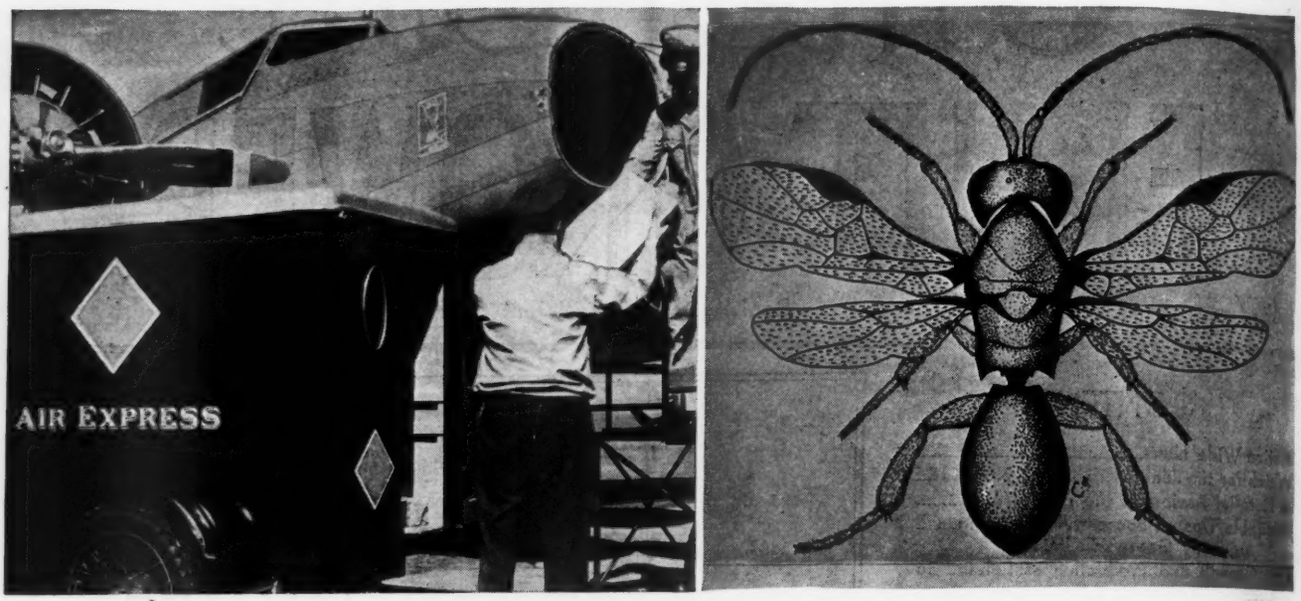
AMERICAN FRUIT GROWER'S June Directory Number will prove to be an outstanding event in the fruit field. The interest, support and co-operation we are receiving in the preparation of this Directory Issue fills us with pardonable pride. When you receive your copy of the Directory Number, we know you will find it the most helpful and handy issue of AMERICAN FRUIT GROWER it has been our pleasure to publish.

You will find this Directory of the fruit industry a useful reference book throughout the year. Keep it handy and turn to it whenever you want information or names and addresses under various classifications. It will be the kind of Directory of your own industry that you have always wanted and needed.

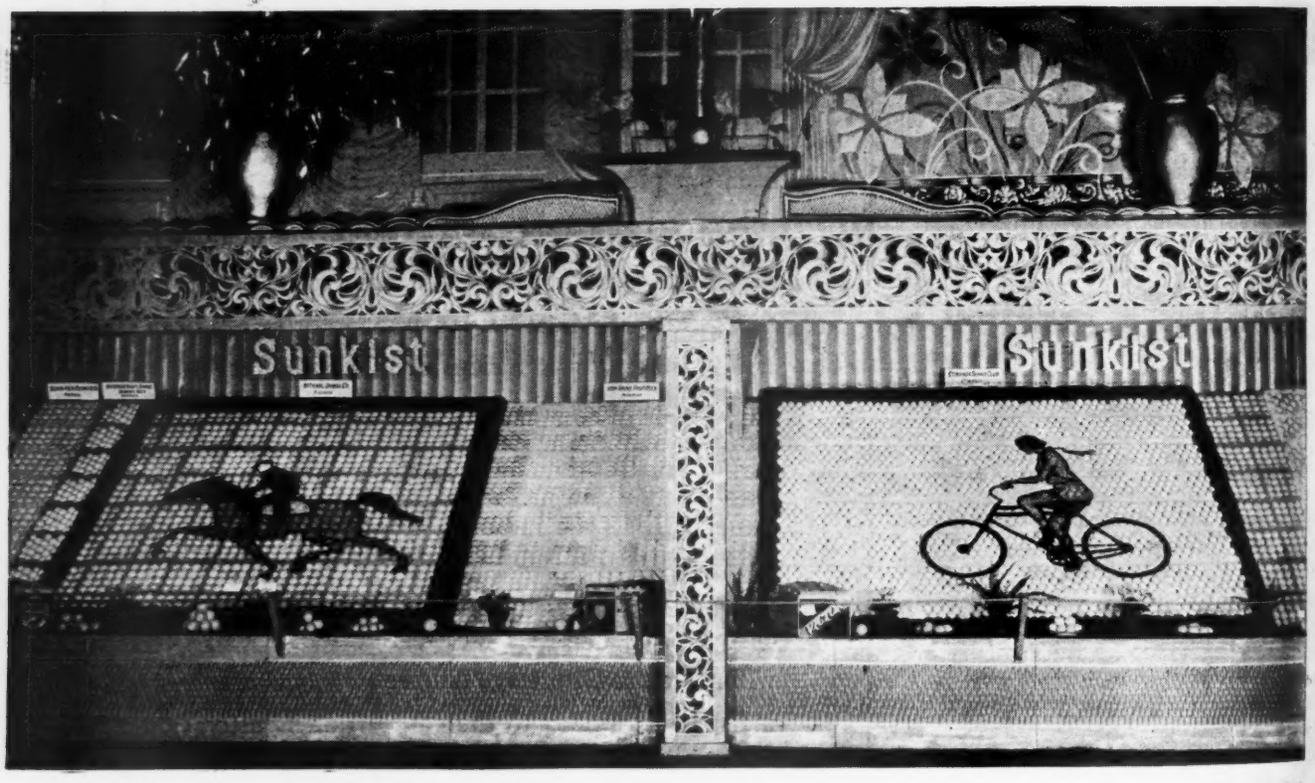
We promise that with your helpful suggestions and criticism, and the aid of all other interested individuals and organizations, manufacturers, distributors and sales agents throughout the country, AMERICAN FRUIT GROWER will make this Directory Number an annual event—a truly indispensable index to the entire fruit industry.

Watch for the June Directory Number!

A PICTORIAL REVIEW OF THE FRUIT WORLD

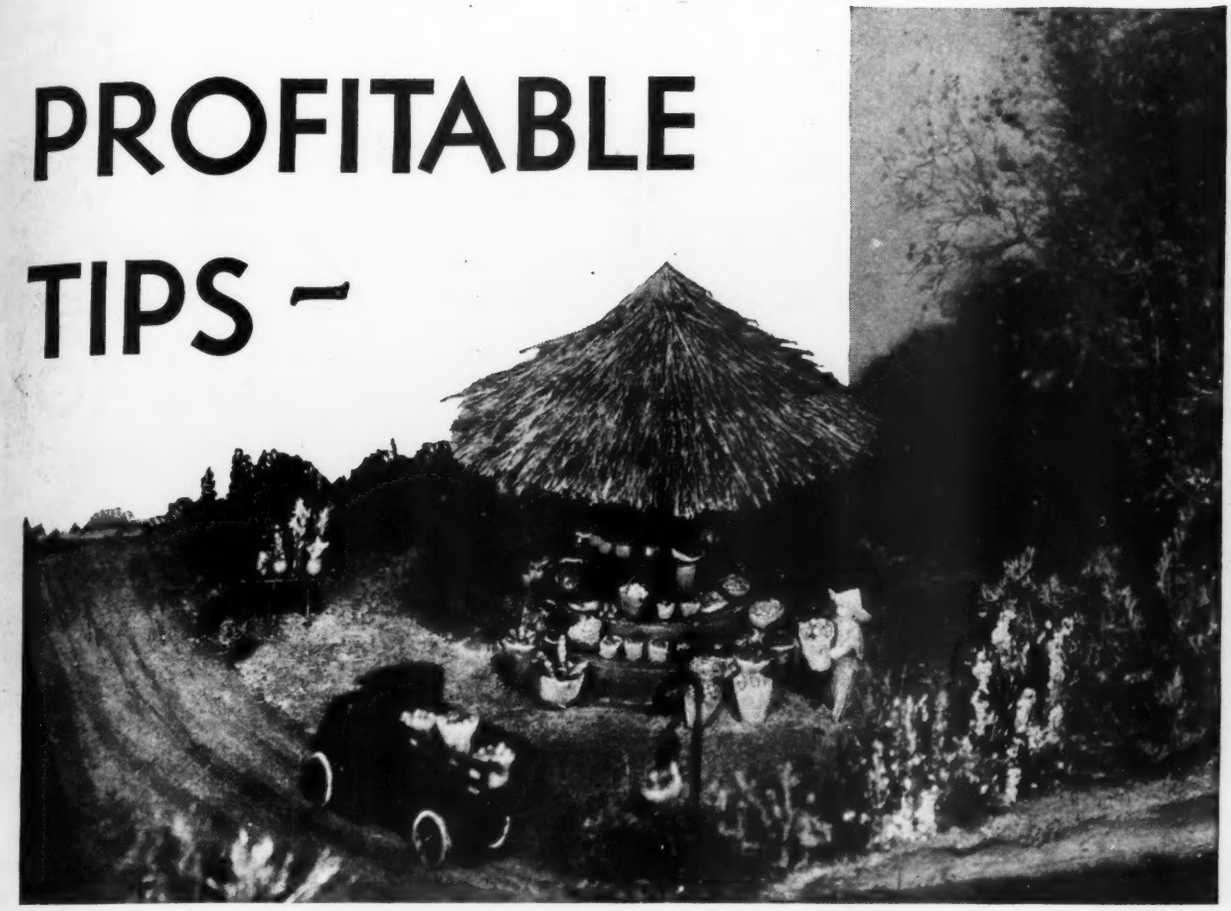


MAN LENDS WINGS TO WASPS TO FIGHT FRUIT PESTS: Wasps are loaded into speedy transport planes for air express delivery from New Jersey to apple orchards in western states to combat the codling moth. At the right is sketch of the beneficial insect—Ascogaster carpocapsae—which preys upon fruit pests. This parasite insect is imported from Japan, for breeding and distribution to affected areas by the U.S.D.A. at its Bureau of Entomology and Plant Quarantine, Moorestown, N. J.



MOTION PICTURES FEATURE 25th NATIONAL ORANGE SHOW: At the National Orange Show, California's Greatest Midwinter Event, these "motion pictures" of Sunkist sports activities "painted" with color-wrapped oranges caught the attention of the crowds viewing the rack fruit displays of the California Fruit Growers Exchange.

PROFITABLE TIPS — ON SUCCESSFUL MARKETING



By GEORGE E. WALKER

This attractive roadside stand was awarded a second and special prize by the Garden Club of America at the annual Flower Show, New York City. The photograph shows the model exhibited at the Show by Mrs. Katherine M. LeRoy, New York

DURING a recent summer when the markets were glutted with apples, I found a way to create a demand, at profitable prices, by doing something that other growers were not doing. Before the harvest, I fully expected that it would be necessary to place the fruit in storage and depend on a later market; or ship to other markets where I was sure of unprofitable returns. I soon realized that my plan was going to result in an insufficient supply of apples to satisfy my local market on which I was a "newcomer."

The first step taken was to canvass the retail stores, acquainting them with my plan of co-operating with the merchant by supplying him with the kind of fruit he wanted and when he wanted it. Also to pack the apples according to the dealer's trade requirements. The dealers responded freely with orders which made it unnecessary at any time to sell from house to house or to ship to another market.

I called on the stores each day in person or by telephone, booking the orders for delivery the following day. The dealers did not hesitate to place their orders because they knew that fresh picked fruit would be delivered, fruit that had not been peddled all over town. This method made it possible for the dealer not to overstock at any time and have dull finished fruit on hand. The general opinion is that when a grower brings a load to market unsold the dealers can buy at their price rather than at the true market price. My plan prevents breaking the market by reason of having unsold loads on the market.

My co-operation in seeing that the dealer resold my apples has developed a lasting good will. In order that my apples would appeal to the consumer, each apple was placed in the basket in a way that the dealer always had an attractive, polished, ring-faced pack on display. The busy clerks never had to take time off to "dress up" my fruit.

To prove the value of this practice, I took the same grade of fruit, making a jumble pack, and set it alongside the ring-faced pack. The basket that was ring-faced and polished from top to bottom, outsold the jumble pack two to one.

Many growers seem to think that they cannot afford to grade fruit critically when values are low, not to speak of putting the extra labor in dressing the package so that it will attract the consumer's attention.

By guaranteeing each bushel to be free from blemish and an attractive pack, and by co-operating with the dealer in the sale of apples, my crop netted me 50 to 75 cents a bushel more than other growers were receiving on my market.

When I was less experienced in the business of marketing fruits and vegetables, I made costly mistakes

(Continued on page 18)

TREE GROWTH AND PRODUCTION

AS RELATED TO ORCHARD PRACTICES

By JOHN T. BREGGER

IT is a significant fact that you cannot separate the factors of growth and production in thinking of fruit trees. It is also true that during the early life of the tree you can have *too much growth* to get fruiting or production, but after a tree once attains fruiting age, anything which tends to *stop* the growth of that tree also tends to stop production as well. This is not always an immediate result, but one which invariably follows within a few years.

We must naturally know first of all what factors promote tree growth and what factors tend to prevent it. We want to maintain adequate growth, of course, which implies the various surfaces on which flowers and later the fruit is borne. Any factor which promotes growth, therefore, will promote production, and a factor which decreases growth will in time decrease production.

The quickness of response between growth and production varies somewhat with the kind of fruit. In the case of the peach tree, fruit is borne on nothing but one-year wood. For this reason if tree growth slows down or stops, the fruit crop is affected the very next season. In a fruit such as the apple, where spurs function to a great extent in fruit production, the effect of decreased growth is not so quickly seen.

One can visualize the factors which promote tree growth by thinking almost entirely of tree foods. These may be divided into soil foods or nutrients and air foods, together with sunshine and water, which are vital parts of the machin ery of manufacture and translocation. Soil nutrients include nitrogen and approximately a dozen minerals, such as phosphorus, iron, lime, potassium, magnesium and sulphur. Most soils contain ample amounts of all or nearly all of these minerals, but usually lack sufficient nitrogen. This is where organic matter comes into the picture, as organic matter or humus usually furnishes the greater part of this nitrogen. Organic matter also plays a valuable role in making available the minerals which are often in unavailable states until dissolved through the influence of organic acids given off by decaying organic matter.

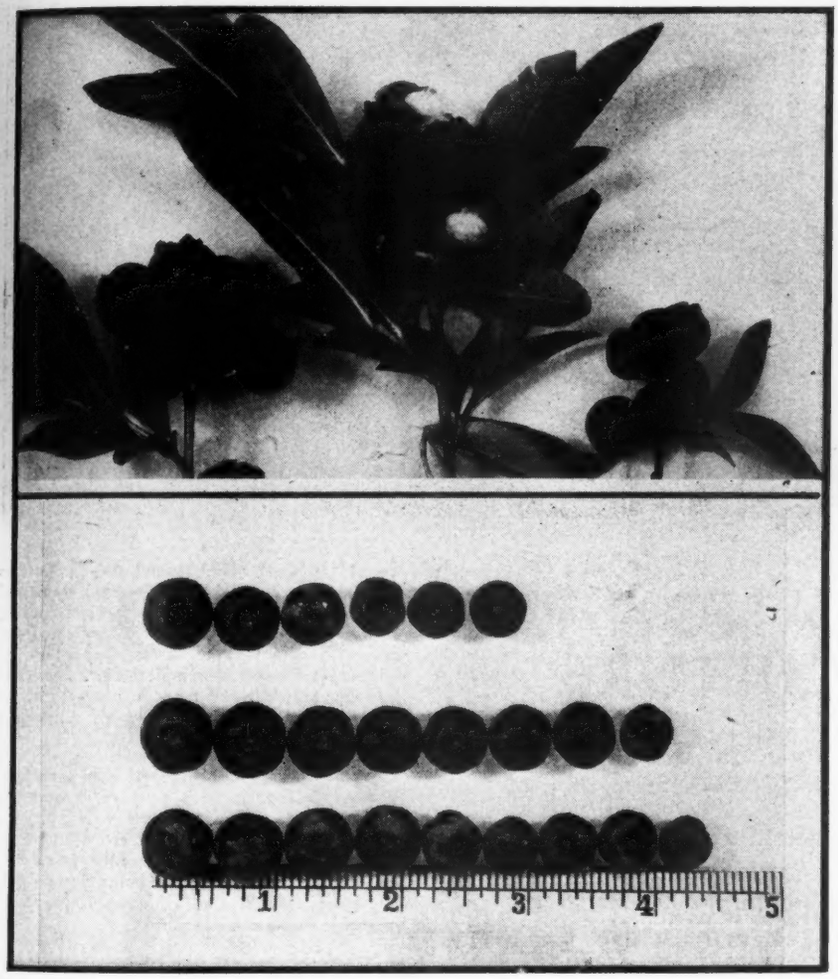
We cannot say too much about water, without which all the nitrogen and minerals in the world could not be taken up by the tree, following which the growth of the tree takes place. It should be available in sufficient quantities at all times to prevent the foliage of the tree from wilting, because even when a slight degree of wilting takes place, food manufacture and growth cease. Deep soils containing plenty of organic matter will naturally hold and supply much more water than shallow soils low in humus.

Turning to the air foods, we usually speak only of carbon or carbon dioxide gas, which is the form in

(Continued on page 21)

COMMERCIAL BLUEBERRY CULTURE

By STANLEY JOHNSTON
SOUTH HAVEN (MICH.) EXPERIMENT STATION



Above—A six-year-old Rubel blueberry bush carrying a full crop.

Left, top—The Taylor blueberry, awarded first prize in the Michigan State Horticultural Society contest in 1931 as best native highbush blueberry. Below—All the ripe berries in the three clusters shown in top photograph. The Taylor is an early maturing variety of attractive appearance and excellent quality.

CONSIDERABLE confusion exists among a large share of the people regarding the difference between a blueberry and a huckleberry. Some believe that the light blue colored berries are blueberries and that the dark colored berries are huckleberries. Others believe that the low growing plants are huckleberries and the high growing plants are blueberries. There are, however, both light blue and dark colored forms of both blueberries and huckleberries and there are also high and low growing species of both. The easiest way to distinguish the two kinds of berries is by the number of seeds. Huckleberries have 10 large seeds and blueberries have a large number of very small seeds. Horticulturists are not greatly interested in huckleberries, as the large seeds are very objectionable. Blueberries, however, have been the object of considerable interest on the part of horticulturists, especially in recent years.

Several species of blueberries occur naturally in many parts of the United States. The lowbush species are found abundantly in certain parts of the states of Minnesota, Wisconsin, Michigan, New York, Pennsylvania, New Hampshire, Maine and some other northern states. The highbush species are found in parts of New Jersey, New York, New Hampshire, Massachusetts, northern Indiana and southern Michigan. A slightly different species of highbush blueberry occurs naturally in several southern states, including South Carolina, Georgia, Florida, Alabama, Mississippi and Louisiana. Several species of native blueberries have been found growing in the Pacific Coast region.

In the wild state the blueberry was worthier of attention than the blackberry, raspberry or currant, but the natural supply was so abundant that little interest was shown in growing this fruit under cultivation. Attempts were sometimes made to transplant a few superior wild blueberry plants into gardens, and usually these attempts were unsuccessful on account of a lack of knowledge concerning the plant's soil requirements. Blueberries also had the reputation of being very difficult to propagate and nurserymen were not interested in handling a plant that was difficult to propagate unless there was an active demand for plants. Accordingly, the blueberry received very little attention from horticulturists or nurserymen for many years, and the public obtained the material for blueberry pies and muffins from areas of wild plants scattered throughout the country.

In the early part of the present

(Continued on page 25)

ALTERNATE BEARING

AND ITS RELATION TO ORCHARD CULTURE*

By F. N. FAGAN

PENNSYLVANIA STATE COLLEGE

THE subject "alternate bearing of the apple" has been a topic for many discussions at fruit growers' meetings in past years, and it has been the subject of much investigation in experiment stations in the United States as well as in foreign countries.

In reading through the literature in horticulture, we find many papers published on alternate bearing. Many of these papers discuss pruning, thinning and application of manures or fertilizers and their relation to alternate bearing. After viewing the possible causes and suggested remedies for alternate bearing, I think most fruit growers would agree with this statement: It is unlikely that any single orchard operation will overcome alternate bearing and that all orchard operations combined could not overcome the effect of a climatic condition that might throw trees into alternate bearing.

In the Pennsylvania State College Agricultural Experiment Station apple orchard, now 26 years old, the yield records for the 20-year period from 1914 to 1934 are interesting. The methods of soil management, such as fertilizers, manure, cultural treatments and cover crops, are the varying factors in the different blocks of trees. The other cultural treatments, such as pruning, spraying, thinning and harvesting, have been as uniform as possible.

A study of the following brief summary of five blocks and seven other groups of trees (groups 6 to 12 inclusive) shows that soil treatments

(Continued on page 22)

*Paper presented at the 1935 Proceedings of the State Hort. Assn. of Pennsylvania.

Fig. 1 (Top)—Looking east between two rows of Stayman, 26 years old. Twenty trees total yield in 20 years, 1914-1934: 2468.72 bushels; an average per tree of 123.43 bushels. Treatment: Annual legume cover crop. Lime requirement for legumes maintained. Phosphate fertilizer added three times in 26 years for the benefit of the cover. No added nitrogen in the form of fertilizer.

Fig. 2 (Center)—Looking west from same location as in Fig. 1. Two rows of Stayman 26 years old; 16 trees total yield in 20 years, 1914-1934 1240.43 bushels; an average per tree of 77.52 bushels. Treatment: Annual non-legume cover crop. Same liming as in Fig. 1. Phosphate added same as in Fig. 1. No added nitrogen in form of fertilizer.

Much of the difference in the total 20-year yield per tree in the two blocks pictured in Figs. 1 and 2 can be traced to the fruit produced or not produced in the "off years." This fact is shown in the individual tree yield records by years in the following tables:

Fig. 1—Row 14; Stayman trees S. and T.:

	YIELD IN POUNDS	
1914	———	———
1915	———	———
1916	16.00	19.00
1917	12.00	17.00
1918	9.00	15.00
1919	29.00	44.00
1920	198.00	242.00
1921	55.00	66.00
1922	329.00	220.00
1923	595.00	562.00
1924	308.00	275.00

(Continued on page 23)

ON TOP OF THE WORLD

IN DONIPHAN COUNTY, KANSAS

By J. S. BRAZELTON

NESTLED in the upper right hand corner of Kansas there lies a district that bids fair to become, in the not far distant future, the most famous Jonathan producing section in all the world. Although one does not generally associate Kansas and fine apples, yet Doniphan County in that state has all that it takes for the production of quality fruit. Growers in this favored spot are conscious of their ability to produce a superior apple and they know that some time, in the years which lie ahead, they will be sitting atop of the world. With an eye toward the future they are making preparations now to be ready for that time when it comes.

Advantageously situated as to marketing facilities, all the apples that are produced in this Missouri River apple center can be consumed within a radius of 500 miles. Apples may be delivered by truck or rail to any point within this area for an average of 15 cents per bushel. Competing fruit from other districts cannot be laid down in this territory at such low transportation costs. Within this trade area there is a number of large cities all with modern, up-to-date cold storage facilities. Nine paved highways reach the principal orchards in this district, practically all within a radius of 10 to 15 miles, which makes it possible to get apples into cold storage in the quickest possible time. Transportation facilities unexcelled over six large railway systems give fast freight service to all points in every direction.

In the matter of production costs, the northeastern Kansas apple grower has an "edge" on those growers in

(Continued on page 17)

Mary Helen Brazelton, the author's daughter, and Margaret Blevens, daughter of C. F. Blevins, another orchardist.

Orchard tour in Hunt Brothers' orchard near Wathena.

The Blair Apple Growers Association community washing, grading and packing house.

AMERICAN POMOLOGY

A Page Conducted in the Interests of the American Pomological Society

EARLY last winter the season for horticultural society meetings was opened. The crop of annual reports began to appear early in the year, and all these are not yet in. The writer has received a number of reports, and they are indeed very worth while publications. State horticultural societies report the largest attendance and the best programs in years. Undoubtedly this reflects a healthy condition in the societies and a confidence among fruit growers in the value of such educational organizations. The annual reports which are published by the societies contain many pages of high-class information relative to practically every phase of fruit growing. Fruit growers are urged to utilize such an opportunity to keep abreast of the latest developments in orcharding.

Suppose we take a look at what is found inside the covers of a good state horticultural society report. The one just at hand is that of the Ohio society, which reports the annual meeting held in Columbus, January 28 to February 1, 1935. It contains more than 200 pages, and the subjects covered are codling moth, soil management, homemade lime-sulphur, better spraying, washing of fruit, marketing, varieties, etc., etc.

Orchard soil management is receiving renewed emphasis among Ohio growers. C. E. Drumheller, Buena Vista, found Korean lespedeza valuable. He says, "The most outstanding fact this past year was the breaking up of a 12-year-old sod with a weed hog, and seeding to Korean lespedeza, an annual which in my opinion is the best legume we have for southern Ohio because of its tolerance to soil acidity, its resistance to drought and its ability to compete with other plants and grasses. . . . . Our spring was very dry. It began to rain in May and the lespedeza grew very rapidly when it started. We mowed the orchard July 1 and again September 1. After the second cutting the plant spread and made a thick mat covering with an abundance of seed for reseeding this coming spring."

T. L. White, Mentor, Ohio, relates that, "It was not until the last two years that we have gone after humus building in a more determined way. I have hauled in and given each tree a liberal amount of manure and added to this enough mulch material to entirely kill the grass under the tree. Early in the spring I tore up the sod between the rows with a tractor springtooth and added limestone, then fertilized with 200 pounds of a 2-12-6 fertilizer and seeded to clover between August 6 and 8. Timely rains came, and as a result we secured a very good seeding of clovers eight to 10 inches high over much of the area by late fall, making a good cover, and I am hoping that I will be able to cut a good amount of mulch material to put around the trees this next summer. . . . . We expect to leave the clover and timothy for one or two years, then tear up the sod with our tractor springtooth, lime if necessary, and reseed to clover."

Bulletin on Pears

According to Farmers' Bulletin No. 1739, "Pear Growing in the Pacific Coast States," by C. F. Kinman and J. R. Magness, "The pear takes fourth place in importance among the deciduous fruits of the Pacific Slope." The estimated acreage of pears in California in 1932 was 69,548 acres in bearing trees and 12,407 acres in non-bearing trees, making a total of 81,955 acres. The Bartlett variety comprises 70,076 acres or about 87 per cent of the acreage in California. In the Rogue River Valley of Oregon, 11,631 acres are devoted to pear growing, with Bartlett again in the lead with 3,862 acres as against Bosc with 3,025 acres, and Anjou with 2,593 acres. In Washington, the Wenatchee and Yakima Valleys have a combined acreage of 24,550 acres. Here the Bartlett leads all other varieties and accounts for a total of 16,524 acres. Anjou, Bosc and Winter Nelis are also important.

This bulletin gives an excellent account of pruning, irrigation, and cultural and other practices employed on the west coast in growing the pear. In commenting on the future of pear growing in the Pacific Coast states, the authors point out that the pear is a dependable fruit from the standpoint of production and high quality of fruit. Plantings from 1920 to 1930 have increased production so that some marketing difficulties have been encountered during heavy crop years and "extensive increase in the present pear acreage seems undesirable. The present production is sufficient in normal years to provide about all the fruit that the market can utilize, particularly of the summer and early fall varieties."

Notes From Office of the President

The following commission is announced to investigate the exact site of the burial place of John Chapman, Johnny Appleseed, who died near Fort Wayne, Ind., in 1845: Dr. William A. Taylor, Bureau of Plant Industry, Washington, D.C.; Dr. M. B. Waite, Office of Horticultural Investigations, Washington, D.C.; Prof. Wendell Paddock, Ohio State University, Columbus; Prof. B. S. Pickett, Iowa State College, Ames, chairman. A meeting of the commission will be called at Fort Wayne some time in May. Any individual or organization interested or in possession of biographical facts or data that would add to the general fund of reliable public information on the career of John Chapman, or which would throw light on his burial place is invited to correspond with any member of the commission.

Encouraging progress has been made on arrangements for the 1935 meeting. Following the announcement in the March number favoring a New England meeting at Hartford, Conn., letters were received from Connecticut, Vermont, New Hampshire, Rhode Island and Massachusetts promising hearty co-operation. A definite announcement including exact dates will follow next month.

A committee on Spray Residue Research from the Health Standpoint was authorized at the meeting of the board of managers March 23. Dr. W. A. Ruth, Department of Horticulture, University of Illinois, Urbana, has accepted the chairmanship. The personnel will be announced in the near future.

Variety Notes

A list of "first degree hardy" fruits recently prepared by the North Dakota Experiment Station and Fruit Growers' Association includes the following varieties: *Apples:* Hibernal, Duchess, Haralson, Charlamoff, Patten's-Greening, Anoka. *Crabapple:* Florence, Whitney, Dolgo. *Grapes:* Alpha Beta. *Plums:* Terry, Asinaboine, Surprise, Wolfe, Cheney, Redwing, Wanita, Cree, Pembia, Emerald, Ojibwa, Raddison. *Gooseberries:* Carrie, Pixwell. *Raspberries:* Latham, Sunbeam, Chief.

Observations at the New York Experiment Station show the Barcelona filbert is not hardy enough for such a cold winter as that of 1933-34. The Italian Red variety is much more promising.

Join the American Pomological Society. Dues $1.25 per year. Life membership $25.00. Send remittances to H. L. Lantz, secretary, Ames, Iowa.

H. L. Lantz

HEARD AT THE CONVENTIONS

By JOHN T. BREGGER

The cost of scraping and banding apple trees was found by Frank Farnsworth, a well known Ohio orchardist, to be less than the cost of a single spray application. This treatment, however, may be responsible for reducing the worm carry-over in the orchard by 50 per cent.

Within a given variety, the largest peaches were found by workers in the Illinois Experiment Station to have the largest pits. Cultural conditions should be ideal during the first period of rapid growth which follows the blooming period.

"Use only legume cover crops in a young orchard; legumes or non-legumes in the bearing orchard!" So recommends Dr. R. H. Roberts of the Wisconsin Experiment Station.

Another use of cellulose film (Cellophane, Sylphrap, etc.) has been found in nut grafting, where to secure drainage of the graft unions, a wrapping of this material is put on before the wax is applied.

A good bait for codling moth traps consists of five per cent honey, five per cent molasses, and 90 per cent water.

On slopes, sod will hold summer rainfall when cultivation will not. The first stage in moisture conservation is therefore a proper type of ground cover to fit the conditions of the orchard.

According to Dr. A. J. Heinicke of Cornell, trees use fertilizer *nutrients*, but manufacture their own *food*. He finds more food manufactured in the morning than in the afternoon, the rate being about one pound per hour in the average tree. Nitrogen fertilizers, in keeping the leaves dark green, increase their efficiency.

Charting of codling moth catches is very important and useful to every apple grower. Six traps constitute a satisfactory minimum, though 12 are considered better. Screening over the top will keep out birds and cutworm moths.

The Pennsylvania Experiment Station has found that the quickest way to bring poor orchard soils into high fertility is by the use of either green manures or barnyard manure. A good application for this purpose will be at least five tons to the acre.

Young filler trees may be ringed to throw them into early fruiting. The season for ringing (trunk or branches) is in May or June.

Too few growers have sufficient spraying equipment to do a satisfactory job. An auxiliary water tank will sometimes help solve this situation.

Simplify Removal OF CONTROL

Satisfactory control of codling moth and the removal of lead and arsenic residues to within the established tolerance are possible if you will follow the 1935 Sherwin-Williams Codling Moth Spraying Schedule. We offer you four dependable products for use in your fight against Codling Moth—

S-W Arsenate of Lead
S-W Summer Mulsion
S-W Tar-O-Flakes
S-W Bandip

S-W SUMMER MULSION—A dependable white oil emulsion used successfully for many years to destroy codling moth eggs and to improve the coverage of Arsenate of Lead on apples.

S-W ARSENATE OF LEAD—A 98% pure lead arsenate without a "spreader" or astringent. Deposits more than 80 micrograms of arsenic per square inch of apple surface—the minimum amount necessary for the effective control of moth larvae.

S-W TAR-O-FLAKES—The original pine tar soap recommended for flocculating arsenate of lead to increase deposit in an even film over apple surface.

S-W BANDIP—The original cold mix ready-to-use combination of Beta-Napthol and lubricating oil recommended for dipping tree bands to destroy codling moth larvae.

USE THIS FREE CODLING MOTH CONTROL SERVICE

Our Spraying Service Department offers a new and practical plan for better Codling Moth Control. This plan will tell you *how* and *when* to spray, how to trap codling moths and band your trees to catch worms. If you want the latest, most practical detailed information on codling moth control, address Insecticide Department, THE SHERWIN-WILLIAMS CO., 101 Prospect Ave., Cleveland, Ohio.

SHERWIN-
SPRAY AND DUST

CODLING MOTH AND LEAD AND ARSENIC *Residues* *with the*

SHERWIN-WILLIAMS

1935 CODLING MOTH SPRAYING SCHEDULE

for Fall and Winter varieties of apples to be washed

CALYX SPRAY— 3 pounds S-W Arsenate of Lead, 3 pounds hydrated lime and ¼ pound Tar-O-Flakes

FIRST COVER SPRAY— (7 days after Calyx spray) Same as for Calyx spray.

SECOND COVER SPRAY— (15 to 20 days after Calyx spray) Same as for Calyx spray.

THIRD COVER SPRAY— (10 days after second cover spray) 3 pounds S-W Arsenate of Lead, ½ gallon Summer Mulsion, ¼ pound Casein Spreader.

FOURTH COVER SPRAY— (10 days after third cover spray) Same as for third cover spray.

SUCCEEDING COVER SPRAYS— (The time to apply additional cover sprays will depend upon the control of first-brood worms by spraying and banding. The time to apply the first spray for second-brood codling moth is approximately 10 weeks after the fall of the bloom.) 3 pounds S-W Arsenate of Lead, 3 pounds hydrated lime and ¼ pound Tar-O-Flakes. Do not use Summer Mulsion or any other oil emulsion after the fourth cover spray because they will interfere with the removal of both lead and arsenic residues.

For Early Summer Varieties Such As Transparent— Not to be Washed

CALYX SPRAY— 3 pounds S-W Arsenate of Lead, 3 pounds hydrated lime and ¼ pound Tar-O-Flakes.

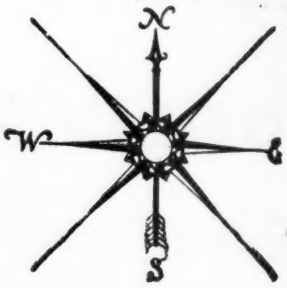
FIRST, SECOND, THIRD, AND FOURTH COVER SPRAYS— ½ Gallon Summer Mulsion and 1 Pint Nicotine Sulfate

NOTE: These Dilutions Are per 100 Gallons of Water

Do not use Summer Mulsion if any Sulfur is visible on the leaves. On varieties susceptible to Blotch, use 4-8-100 Bordeaux Mixture in the Third and Fourth Cover Sprays. Bordeaux Mixture is compatible with Summer Mulsion.

WILLIAMS MATERIALS

STATE HORTICULTURAL NEWS



Quaker State News

WARM weather early in April threatened to bring on the blooming season from two to three weeks too soon. Fortunately much colder weather has been delaying the buds, although at State College on April 6, most apple varieties except the very late bloomers were in a delayed dormant stage.

Most of the winter killing of peach fruit buds has been found to be located in southern and southeastern Pennsylvania which had considerably lower temperatures last winter than the rest of the State. As expected, the old question of sites is entering freely, as well as vigor and care of the trees. It is only a guess —which probably has not more than nine chances in ten of being wrong—that at this writing there is no prospective peach shortage in Pennsylvania.

Field Day and Summer Meeting

On July 29 and 30 the Department of Horticulture of The Pennsylvania State College will stage a two-day fruit growers' field day at State College. The orchards themselves will be the background of the program, with ample opportunities for everyone to see and hear everything. Dr. D. F. Fisher of the U. S. D. A., will discuss fruit washing at a meeting of the State Horticultural Association of Pennsylvania to be held during the field days.

Commercial concerns are invited by the State Horticultural Association to display at their own expense but at no charge for space any orchard equipment they may wish. Interested persons should communicate with R. H. Sudds, secretary, State Horticultural Association of Pennsylvania, State College, Pa.

Summer Tour

Following the fruit growers' field days, July 29 and 30, the summer trip of the State Horticultural Association will assemble at Geneva, N. Y., during the afternoon of July 31 and the fruit work at the Geneva station will be inspected on August 1. The tour will proceed into western New York through Sodus, then west towards Niagara Falls. The Geneva station and the New York State county agents are co-operating to show us many worth while features.

On August 2, the fruit men of the Vineland Horticultural Station, Ontario, Canada, will pilot us around their beautiful fruit district and station. On Saturday morning, August 3, we shall have the opportunity to inspect the cyanamid company's plant at Niagara Falls, Ontario. This trip will not cost much and it will not take a great deal of driving. Plan to take the family along. The secretary is trying to arrange special features for the ladies wherever possible.

County Secretaries

County secretaries should take greater care to send correct names and addresses to State College. If they are wrong, the paid-up member fails to receive AMERICAN FRUIT GROWER and the association publications, for the post office will not forward this class of mail. Consequently, somebody feels swindled and somebody else may receive a "dressing down" from the irate member. Too often the wrong individual falls heir to the latter.

R. H. SUDDS, *Sec'y,*
State College.

Delaware Meeting

A THREE-DAY session was scheduled for the 48th annual meeting of the Peninsula Horticultural Society at Camden, Del. A group of 20 speakers participated in the program. The opening afternoon session was devoted to the codling moth problem, discussed by L. A. Stearns, W. S. Hough and E. N. Cory, from the standpoint of Delaware, Virginia and Maryland. The round table discussion on the control problem of this pest which followed was in charge of A. B. Thomas, with growers participating.

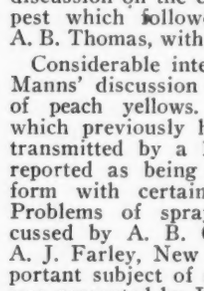
Considerable interest centered in T. F. Manns' discussion on the present status of peach yellows. This virus disease, which previously has been shown to be transmitted by a leaf hopper, was also reported as being present in a masked form with certain varieties of plums. Problems of spraying fruit were discussed by A. B. Groves, Virginia, and A. J. Farley, New Jersey, while the important subject of spray residue removal was presented by J. H. Beaumont, Maryland. "The Apple Outlook," by Director C. A. McCue, Delaware, proved a very instructive subject. Valuable recommendations were secured by growers from the discussion by A. L. Schrader, Maryland, on "Training and Pruning Peach Trees," as well as the report by F. S. Lagassé on the "Response of Yellow Transparent to Various Nitrogen Treatments."

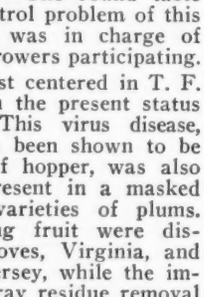
The fruit and vegetable exhibit was smaller than experienced the past three years. However, the commercial exhibit was larger and exceptionally well patronized with 26 commercial representatives.

A central annual meeting place is being considered to replace the present system of holding annual meetings. Such a plan should prove more convenient for our membership as well as the commercial exhibitors. The annual report of this meeting was mailed to the membership list during March. The following officers were elected for the year 1935:

President, Robert Smith, Bridgeville, Del.; vice-president, O. R. Higgins, Hurlock, Md.; treasurer, W. Lee Allen, Salisbury, Md.; secretary, J. F. Adams, Box 425, Newark, Del.

J. F. ADAMS, *Sec'y,*
Newark, Del.





MEET THESE PRESIDENTS

Robert M. Clark
Iowa

J. Erval Christensen
Utah

Utah State News

THE horticultural department of the Brigham Young University at Provo has recently planted a large experimental orchard on its University Hill Farm in Utah county. The work was done under the direction of Prof. Seth Shaw of the institution and the plantings include 120 new varieties of fruit trees.

It is claimed that there are very few experimental orchards of this scope in the intermountain states. Fruit growers hereabouts are expected to find the orchard of great value to them in determining what they should and should not plant in the future.

Of the 120 new varieties of fruit represented by the trees, there are 40 varieties of apples, 20 of prunes and plums, 10 of peaches, 15 of grapes, three of nectarines, five of apricots, and many sorts of small fruits. Orchards of apples and other fruits are already producing on the farms of the university.

Indiana Notes

AT the business meeting of the recent annual meeting of the Indiana Horticultural Society, it was the expressed desire of the membership that every effort should be made to establish and maintain a closer and more helpful relationship with other state agricultural organizations. A committee of three individuals, prominent in Indiana horticulture for a number of years, was appointed. They are Frank Plass, Vincennes; L. V. Doud, Denver; and Billy Walton, La-Porte.

The membership has been assured that the approximate date of the first spray for scab control will be sent out by the Purdue Extension Service. Of course, subsequent sprays will depend very much on the rain conditions which follow the initial scab spray.

Numerous legislative bills have been reviewed by officers of the society recently, most of them being of national

(Continued on page 27)

ON TOP OF THE WORLD

(Continued from page 11)

districts where irrigation is necessary. With an annual rainfall of about 33 inches, this part of Kansas enjoys a climate that is ideally suited to the production of apples. The men who grow apples in Doniphan County know that ages ago, when the world was yet young, a peculiar kind of soil was deposited here by wind and ice and water; a soil that in origin and composition is unlike any other soil in the United States. In fact, similar soil is found only in two other places in the world, in northern China and the Rhine Valley in Germany. To men who "know their apples" it is no secret that fruit grown on loess soil, as the geologists call it, is of wonderful long-keeping quality, high color and delicious flavor. It is a widely known fact that the Jonathans grown in this district are of outstanding quality, surpassing in flavor Jonathans grown on any other kind of soil. They will keep in cold storage until May 15 to June 1.

It is one thing to grow good fruit; it is quite another thing to market it successfully. Realizing this, these Kansas orchardists are wisely developing the necessary marketing machinery. An adequate system of cooperative buying and selling is gradually but surely being worked out and the orchard man himself owns and controls that machinery. There are three important apple centers in Doniphan County: Wathena, Blair and Troy, all on U. S. Highway No. 36. Wathena and Blair already have cooperative associations that have been in full swing since the harvest season of 1931, and it is very probable that a similar association will be organized at Troy before another picking season rolls around.

Membership in the Wathena Fruit Growers' Association consists of 33 stockholders and 30 non-stockholders, representing 1,500 acres of producing orchards. The fine new building where the washing, grading and packing are done contains 20,000 square feet of floor space and was built at a cost of approximately $21,000, including the up-to-date equipment. The three washing and grading units have a combined capacity of eleven carloads in 10 hours.

The community apple packing house at Blair is a well constructed and commodious building 100 by 160 feet in size, with equipment and capacity similar to the plant at Wathena. There is a full basement in which 60 carloads of apples may be stored

(Continued on page 19)

PROFITABLE TIPS ON MARKETING

(Continued from page 7)

by not knowing the "tricks" of the trade. The first step in marketing is to produce the variety and quality that the markets demand; also use the style package that is liked by the buyers. To efficiently market a crop a survey should be made of the markets before the crop is planted; in the case of an orchard, before the crop is ready for market. With this information you can proceed with a definite program, knowing that you are going to have a product for which there will be a market. Do not grow varieties that are not well known to the consumer. Cater to the buyer's whims as to variety, quality and pack.

My experience is that the buyers are interested in the progress of a growing crop. Sales resistance can be lowered by sending to the buyers, through the growing season, letters reporting the development of the crops. The actual sale is made easier by such advance sales effort.

Many promising deals are lost by quoting "wild" prices. To prevent "killing" the demand, it is advisable to know the prices received by competing sections for the same article and grade; and base your opening price on competitive conditions. It is not advisable to name a price that is out of line with the market, expecting that the buyer will offer the market price.

The buyer knows the "feeler" and the practice of quoting high with the thought of receiving a counter offer results in unnecessary sales expense. The buyer receives prices from all parts of the country and orders from whom he can buy for less.

Values change so often that the modern grower depends on the telephone or telegraph to effect sales.

There is a place in the scheme of marketing for the truck shipper. His rightful place is within a limited area of around 100 miles from point of production. He has an opportunity to develop a demand for consumer packages through truck sales which he cannot do when depending on rail shipments. The average consumer-size package does not carry as well in carloads as it does by truck. There is less chance of crushing when the truck is used. The consumer will receive fruits fresher when shipped by truck; besides, this method of marketing offers an opportunity for personal contact with the customer.

The grower of quality fruits and vegetables will not overlook the opportunity of making his products a household word by developing a demand for attractive consumer-size packages. We would study the market, as previously suggested, but carry the investigation further by inquiring as to the quantity that the average housekeeper buys. If it is in 10-pound quantities, the package will be a 10-pound container, etc.

The package will be attractively branded. It might well tell the various ways the contents can be used. Without fail, the variety name and grade will appear. A variety will not be marketed before it has reached its highest state of quality. The brand name will be short and catchy. The name will be one that will linger long with the user.

To build a permanent truck trade make a select list of the merchants, hotels and others to whom you want to sell. The list will not be so long that it cannot be closely followed up. This trade can be developed by personal contact, attractive direct mail appeal, trade paper advertising, and many other methods that will come to the seller's mind as he goes deeper in making his name a household word. I have always favored a resident broker, or salesman, on each market. A good broker secures quick results. He passes along valuable information.

It is not advisable to economize on printing bills. Be sure that your advertising is attractive—that it gets attention. Use in every case good quality paper and attractive illustrations that will draw the buyers to you. The many tints printed in a darker shade ink, of the same color, attract the attention and are neat. When letters are sent to the trade, I much prefer a two-color letterhead than a letter in one color. I am an advocate of trying to do different than my competitor. Call to the buyers so that they will hear and remember.

I believe that the truck makes it possible for the less-than-carload grower to sell every bushel at profitable prices on the farm. It is here where the truck becomes interesting. The small buyers will come to you when they know that you can serve them efficiently and have the quality that is in demand. Make this your motto: Sell yourself as well as your product. Be positive that after the sale is made you deliver the fruits and vegetables in such a way that the buyer becomes a permanent customer.

ON TOP OF THE WORLD

(Continued from page 17)

and kept without danger of freezing until after Christmas, it is claimed. This co-operative consists of 27 stockholders, but many non-stockholding growers market their products through the association.

In addition to apples, these two associations handle other fruits in season, including strawberries, raspberries, blackberries, tomatoes and grapes. In 1934 the total output of the Blair plant was 40,498 bushels and of this amount 18,502 bushels were Jonathans. Total production for the whole district would show about this same proportion of Jonathans to all other varieties.

Troy, although having a larger orchard acreage than either Wathena or Blair, has been slower in coming to the co-operative plan. Perhaps the reason for this is because so many growers have packing sheds of their own. There are at least 10 of these individually owned plants about Troy, all splendidly equipped with washing and grading machinery, and some of them do custom washing.

But anticipating future demands and needs it seems to be unanimously agreed that co-operation is the only way. To this end there is a very definite and earnest movement now on foot and by the end of the coming summer there probably will be three co-operative apple growers' associations in Doniphan County instead of two. Provision for canning and dehydrating the poorer grades is being considered as a part of the plan.

It is well understood that independent action by the independent co-operative accomplishes little more than independent action by the individual, unorganized grower, so it is planned that the three plants in Doniphan County shall work together. Through better handling and better selling practices, the value of the crops will be increased. Selling efforts will no longer be conducted on a basis of "every man for himself." The apples will be marketed in an orderly way at sellers' prices and forced sales at buyers' prices will be no more. V. M. Dubach, one of the outstanding growers of the Wathena neighborhood, expressed the sentiment of most growers when he said, "I am certain that if our entire output of this county could be marketed co-operatively it would do as much to make a profitable future for the industry as any one thing."

This Missouri River apple center is rapidly becoming the greatest fruit district in the mid-continental section. A normal crop produces 3,000 to 4,000 cars of Jonathan, Winesap, Grimes, Delicious, Golden Delicious, Stayman, Black Twig, York, Ben Davis and Rome Beauty. Young trees now coming into bearing will soon increase production to 5,000 to 6,000 cars. It is estimated there are about 350,000 bearing trees in this district and more than 650,000 trees not yet of bearing age. Production here is now increasing at the rate of 25 per cent each year from young trees just coming into bearing.

The Kansas apple grower can look ahead with a reasonable hope of obtaining a fair return on his investment and an adequate profit for his enterprise. With a setup like this there is no reason for him to be discouraged.

SEASONABLE FASHIONS

No. 2990—Smart Shirtwaist Lines! Designed for sizes 14, 16, 18 years, 36, 38 and 40-inches bust. Size 16 requires 3⅝ yards of 39-inch material.

No. 3173—Charming Model! Designed for sizes 14, 16, 18 years, 36, 38 and 40-inches bust. Size 16 requires 3 yards of 39-inch material.

No. 572—Chic Middy Influence. Designed for sizes 2, 4 and 6 years. This pattern includes both models in the same size. In case of different sizes, two patterns will have to be ordered, and it will cost 15c extra. Size 4 requires 1⅜ yards of 35-inch material with ⅜ yard of 35-inch contrasting for dress; and ⅞ yard of 35-inch dark material with ¾ yard of 35-inch light material for suit.

No. 776—Adorable Blouses. Designed for sizes 16, 18 years, 36, 38 and 40-inches bust. Size 16 requires 1½ yards of 39-inch material with ½ yard of 35-inch contrasting for blouse with bow; and 2⅛ yards of 39-inch material for blouse with cowl neck.

No. 3174—Flatters Larger Figure! Designed for sizes 36, 38, 40, 42, 44, 46 and 48-inches bust. Size 36 requires 5½ yards of 39-inch material with ¼ yard of 35-inch contrasting and 1 yard of 4-inch ribbon for bow for dress and jacket.

Patterns may be secured by mail, postage prepaid, at 15 cents each from FASHION DEPARTMENT, AMERICAN FRUIT GROWER, 1370 Ontario St., Cleveland, Ohio. Be sure to state size required. Enclose 10 cents additional for New Summer Fashion Magazine (15 cents when no pattern is ordered).

MAY IN OUR GARDENS

By MARY LEE ADAMS

POETS have always celebrated the Merrie Month of May, when birds do sing, "Hey-ding-a-ding," when flowers and sunshine are like "a smile of God" upon the earth and our hearts sing with the birds.

But though our hearts be glad, this is no time for idling. The garden beds are visibly demanding attention. Being an orchard woman you surely have a garden and likely do a good bit yourself toward maintaining it. Do it now, should be your motto, otherwise your summer and autumn will be shorn of half their glory.

The fruit grower's establishment rarely runs to anything like a regular gardener, and though at times you may sigh, "Oh! if I only could call a man to do this or that in my garden," the fact remains that the flowers you have personally tended mean ten times as much to you as if the most expert professional had planted and cultivated them. Yes—you do know how that is. The neighbors' children may be pretty, wise and witty, but YOUR children are your own, and by virtue of that alone are ten times more dear.

By May, spring has usually spread up even into high latitudes. If you are lucky your early bulbs, which stand an extraordinary amount of punishment and neglect, have bloomed on the very edge of frost. Crocus and daffodil, still happily on the gold standard, have enriched the chilly days of early spring.

Some inexperienced amateurs make the mistake of cutting down the blades or long green leaves of bulbs as soon as the flowering season is over. This aids a neat appearance but we are strongly advised to allow the leaves to die down or grow quite dry before removing them. After they do this it is safe to separate the bulbs and transplant if desired. This procedure is correct also for snow drops, hyacinths, iris and all types of narcissus.

But, now to work. First we weed, then we cultivate and fertilize, then we plant and then, through long months, we pray for timely showers or strive earnestly to water when needed.

Among household tasks none ranks so lowly, none so despised as dishwashing, so in the garden there is no work so irksome, so lacking in aesthetic appeal, nor so absolutely necessary as weeding. It's a messy job and the worst of it is that, like dishwashing, it is never done. It takes a stout heart to be faithful to the ever recurrent task of keeping the flower beds clean.

Probably we do not approach it in the proper spirit. If we could just think of each unwanted weed as a bold marauder crowding out the rightful heirs to the soil and devouring their substance, we might the more cheerfully stoop again and yet again, alternately digging and pulling until at last, wrenching up the all too healthy root, we shout triumphantly "Out vile intruder!"

Young plants, like young children, should be properly fed. Some flowers, despite their daintiness of appearance, are known as greedy feeders and need plenty of nourishment to keep them in perfect health. No blanket indorsement of any one fertilizer is possible. The old standby of well-rotted stable manure still stands as the panacea for most growing plants and flowers, but there are besides many excellent preparations on the market which assure one of a rich reward of leaf and bloom when carefully applied.

Every gardener seems to long for at least a few favorite annuals. In such case, be moderate in gratifying this yearning. Annuals need much more attention than hardy perennials. A very lovely garden can be developed with well-placed blossoming shrubs and perennials. Even the narrowest bounds can, if planted just right, add a picturesque charm to your home.

A simple, well-kept border is far more pleasing and satisfactory than an ambitious but neglected garden. In the orchard home the purse is far more apt to be limited than the space. The flower lover must keep tight hold of herself not to plant, in the enthusiasm of spring, far more than can be cared for throughout the summer. The result is sure to be both fatiguing and disappointing.

The young inexperienced gardener is therefore urged to make haste slowly, to develop little by little, year by year, the vision of a glowing floral paradise that possesses her imagination. From time to time some feature may be added—a pool, a rock garden or other decorative device as may harmonize best with the existing plan.

By following this method your garden will gradually take on the indefinable charm that makes some old homes captivating. You've seen these

rambling dwellings that appear to have grown in leisurely fashion as if they were the living product of the soil. They have grown by degrees, a wing added here, a porch there, each change improving the original without affecting its personality. House and grounds thus slowly growing together in harmony, have a character utterly impossible to attain in a new building, however handsome, or in a new garden however expensive.

Do not be discouraged because you can't do it all in a hurry. Between the delightful, kindly exchanges with neighbors, and the little treats you can afford to give yourself from alluring and reliable catalogs, there will be no insurmountable difficulty in securing enough for your garden needs.

Most of you have no doubt heard of the world-famous Magnolia Gardens on the Ashley River near Charleston, S.C. Every spring visitors from California, Canada, Florida, from every state in the Union, come by the thousands to visit these gardens. They were developed by a true flower lover, a retired clergyman, who started his modest planting with two rose bushes.

So, Cheerio! good orchard friends, and take comfort in the thought that the modest garden differs from the great gardens of the wealthy in the way that a simple group of loved friends differs from a brilliant throng of comparative strangers. Both contribute to our pleasure, but the first lies nearer to our hearts.

TREE GROWTH AND PRODUCTION

(Continued from page 8)

which the trees take carbon out of the air. Through the action of sunlight upon the green coloring matter of the leaf, which contains iron, we have this carbon dioxide built up chemically into sugars, starches, and the more complex carbohydrates which are found in the wood. These total carbohydrates comprise the greatest weight percentage outside of water, in practically all living plants. They are the sugars and organic acids of the fruit and the other carbon compounds which are absolutely necessary for growth and fruiting to take place.

The fruit grower secures tree growth not only through the providing of soil nutrients and water, as has already been indicated, but by favoring the intake and manufacture of the air foods as well. He regulates the amount of sunshine reaching the foliage of his trees by tree spacing and pruning. He regulates the size of his fruit by thinning i.e., by securing proper relationship between leaf area and fruit numbers. He can promote a proper length and distribution of new wood growth by the reduction in the number of growing points through proper severity of pruning, including particularly the removal of weak inside wood.

Several experiments have been conducted to show the vital relationship between the amounts and ratio of nitrogen and carbon and their relationship to tree growth. With the proper balance between these two elements, normal tree growth and fruiting take place. When this ratio is upset by either too high or too low nitrogen, or by too high or too low carbon content, tree growth is increased *beyond* or decreased *below* the ideal condition where maximum fruiting will be a normal result.

Through the correct application of orchard practices, such as cultivation, mulching, irrigation, fertilization, pruning, thinning, orchard spacing and the like, one may regulate tree growth and maintain it at just the proper stage to insure both regular and heavy crops of fruit. Consistent and regular production of this sort enables the orchardist to maintain the lowest production costs and the highest ultimate profits.

Be Sure to Catch the Early Worm

CATCHING the early worm in an apple orchard goes far toward saving fruit from destruction. The death of one worm from the first codling moth brood, say entomologists of the U.S.D.A., is, in normal years, equivalent to the death of five, or ten, or even more, worms of the second brood.

During the first part of the season the codling moth worms must travel across a good deal of leaf surface to reach the fruit. In doing this they are bound to pick up fatal doses of poison from the spray. Many of the worms of the later broods, however, hatch from eggs laid directly on apples, and can burrow into the fruit without having to cross any great expanse of sprayed surface.

Early spraying to combat the codling moth—the most serious apple insect pest in the United States—has another advantage. The residue it leaves will be removed by nature. That left by later sprayings makes it necessary to wash the fruit before it can go to market.

Hitting the tree tops is essential in early spraying, the entomologists add. If the high branches are missed, the worms there have a good chance to build up large families as the season advances.

ALTERNATE BEARING AND ITS RELATION TO ORCHARD CULTURE

(Continued from page 10)

have in 20 years caused variation in average total yield per tree from 61.62 bushels in the lowest yielding block to 117.35 bushels in the highest group.

Block 1 has the lowest yield; the 45 trees received clean cultivation, no fertilizers, no manure and no cover crops during the first 11 years of their growth. The soil was depleted of organic material during this period of 11 years and we have not been able to bring this soil back into a good condition, although we have been giving it the best possible treatment since 1919, except the application of stable or green manure. All but nine trees in this block have received for 15 years either five or 10 pounds of nitrate of soda per tree each year.

In the following summary the three trees indicated as Row 3, Trees B, C, and D, are three of the trees in this block that have received five pounds of nitrate of soda for 15 years. The marked alternate bearing is responsible for the low total yields, as in a number of individual "on years" these trees have equalled the production of those in the highest yielding group, with an average of 117.35 bushels for the 20 years. This latter group, No. 8, is made up of 96 trees. Of this number, 72 have received annually nitrogen; nitrogen and phosphate; or nitrogen, phosphate and potash; or manure. Since 1928 the added fertilizer has been applied to all 96 trees and a short sod rotation has been maintained. These are picked for study and comparison with Row 3, trees B, C, and D, the highest yielding York, Row 29, Tree K, and its companion. Row 29 is in a block where only two Yorks are planted per row, while Row 3 is in a block where three Yorks are planted per row.

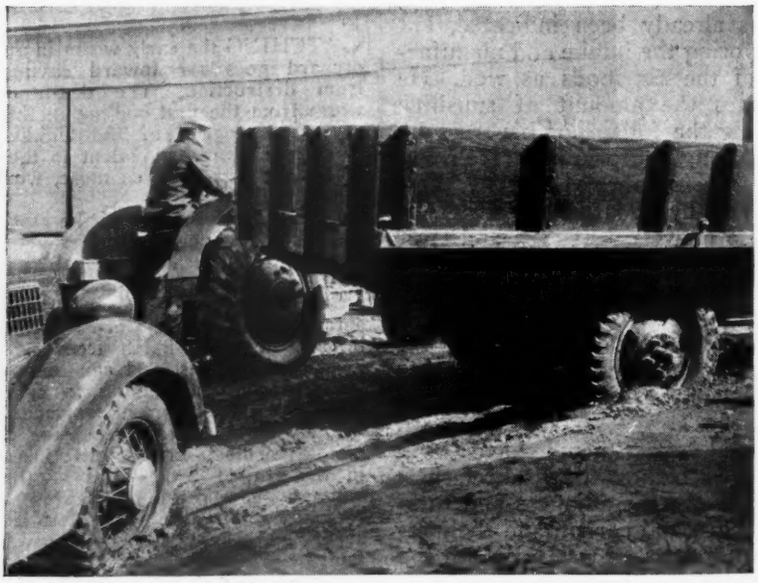
A study of the 20-year yield record of Trees K and L will show that a large part of these high total yields is due to the crops these trees bore during their "off years."

The orchard was planted in 1908 and the fruit yield records are for the 20-year period from 1914 to 1934 inclusive. The varieties are York, Stayman and Baldwin in equal numbers in each block. Lime is added as necessary. Since 1919 all fertilizer has been applied at least one month before bloom, in most years just as soon as the frost has left the soil and it is dry enough to drive on.

INDIVIDUAL YORK APPLE TREE YIELDS IN POUNDS, 1914-1934

Orchard No. 1, The Pennsylvania State College

ROW 3	Trees B	C	D
1914			
1915			
1916	3.00		2.00
1917			
1918	5.00	15.00	2.00
1919		6.00	



TRACTION FOR CAR, TRUCK OR TRACTOR: The photograph above illustrates the "ground gripping" traction of the new tread tires designed especially for use on cars, trucks or tractors that must keep going no matter how "tough the going."

1920	42.00	210.00	5.00
1921	168.00	252.00	84.00
1922	21.00	137.00	5.00
1923	396.00	836.00	550.00
1924	22.00		
1925	352.00	540.00	176.00
1926	33.00		66.00
1927	66.00	72.00	6.00
1928	198.00	308.00	88.00
1929	242.00	154.00	99.00
1930	66.00	231.00	44.00
1931	704.00	353.00	385.00
1932		38.00	3.00
1933	1,100.00	1,176.00	1,100.00
1934			
Pounds* Total	3,418.00	4,328.00	2,615.00
Bushels Total	77.7	98.4	59.4

*44 pounds equals 1 bushel

ROW 29	Trees K	L
1914		
1915	1.00	
1916	40.00	8.00
1917	8.00	6.00
1918	83.00	21.00
1919		
1920	126.00	63.00
1921	840.00	672.00
1922	576.00	273.00
1923	529.00	606.00
1924	132.00	99.00
1925	979.00	782.00
1926	880.00	737.00
1927	748.00	594.00
1928	297.00	319.00
1929	391.00	182.00
1930	931.00	638.00
1931	231.00	286.00
1932	858.00	528.00
1933	967.00	847.00
1934	1320.00	935.00
Pounds* Total	9,919.00	7,596.00
Bushels Total	225.5	172.6

*44 pounds equals 1 bushel

(Caption continued from page 10)

1925	440.00	440.00	
1926	792.00	979.00	
1927	165.00	198.00	
1928	440.00	11.00	
1929	248.00	182.00	
1930	704.00	836.00	
	4,340.00	4,106.00	Total lbs.*
	98.63	93.31	Total bus.
1931	1.00	.25	
1932	3.28	6.12	
1933	3.50	18.25	
1934	19.00	23.50	
	125.41	141.43	Total bus.

Fig. 2—Row 24; Trees S. and T.: YIELD IN POUNDS

1914			
1915		.50	
1916	8.00	24.00	
1917	3.00	14.00	
1918	8.00	84.00	
1919	42.00	145.00	
1920	132.00	110.00	
1921	88.00	88.00	
1922	209.00	330.00	
1923	484.00	462.00	
1924	88.00	110.00	
1925	352.00	264.00	
1926	990.00	825.00	
1927	209.00	33.00	
1928	440.00	627.00	
1929	226.00	55.00	
1930	660.00	484.00	
	3,939.00	3,655.50	Total lbs.*
	89.52	83.07	Total bus.
1931	.25	1.50	
1932	4.25	3.12	
1933	3.56	5.00	
1934	3.75	4.50	
	101.33	97.19	Total bus.

*44 pounds equals 1 bushel

The leaf surface is the manufacturing plant of the tree. A large leaf surface should be developed in the spring, kept healthy during the summer and active as late in the fall as possible.

California Swings to Artificial Fruit Drying

OLD SOL is beginning to feel the unemployment problem. Natural gas is rapidly taking away from him the job of drying prunes and apricots in California. Many gas dehydrators have been installed in the Santa Clara Valley, the center of prune and apricot production.

The swing from sun drying to gas dehydrators is easily explained. Natural gas does the work in from 14 to 30 hours, depending on the size of the fruit, whereas the sun takes from 10 to 20 days. The new method is cleaner, free from rain or dust-laden winds, and so rapid that it prevents loss of weight through fermentation. —*C. W. Geiger*

Prize Winners in Recent Nut Contest

THE 1934 prize nut contest conducted by the Northern Nut Growers' Association has been completed and the committee on awards has announced the prize winners. The contest, as originally planned, offered prizes for two classes only, black walnuts and hickories. However, so many excellent hickories of different species and northern pecans were received that in addition to the awards to the shagbark hickories, additional money was subscribed and prizes were awarded to a miscellaneous hickory class, as well as to a class of northern pecans. In addition to the prize winners' many excellent nuts were accorded honorable mention and will be kept under observation in the future.

List of Winners

The prize winners in the black walnut class are as follows: First: Lewis Edmunds, R. 1, Glasgow, Ky.; Second: Dan Learn, Care Harley Learn, R. F. D. 6, Aylmer, Ontario; Third: Everett Wiard, 510 S. Huron St., Ypsilanti, Mich.; Fourth: Frank Clark, Lamoille, Minn.; Fifth: C. L. Sifford, Buchanan, Va. Honorable mention was accorded to 66 individuals for 71 entires.

In the class for shagbark hickories the prize winners are as follows: First: Roland Fox, Fonda, N. Y.; Second: Mrs. Martha Goheen, Pennsylvania Furnace, Pa.; Third: Mrs. Thomas Coleman, R. 1, Saltsburg, Pa.; Fourth: Leo A. Stadelbacher, Cobden, Ill.; Fifth: George W. Hines, R. 2, Slippery Rock, Pa. Honorable mention was accorded to 61 individuals for 63 varieties of shagbarks, and to 12 individuals for 12 varieties of the shellbark hickory or kingnut.

In the miscellaneous hickory class the prize winners are as follows: First: Russell Berger, Cove Gap, Pa. (Mockernut?); Second: Adam Redcay, R. 3, Lititz, Pa. (Shellbark); Third: Eugene Stocking, R. 2, Owosso, Mich. (Shagbark x bitternut); Fourth: Mrs. Blake Drepperd, Roanoke, W. Va. (Shellbark); Fifth: F. A. Mall, Lamoni, Ia. (Pecan x bitternut). Three shagbark x shellbark hybrids received honorable mention.

The prize winning pecans were submitted by the following: First: Bert Goforth, New Haven, Ill.; Second: Arthur Vandenbark, New Haven, Ill. ("No. 15"); Third: O. J. Hofman, R. 5, Henderson, Ky. ("No. 1"); Fourth: Emil Quickert, Athens, Ill.; Fifth: Mrs. Tony Meyer, Brunswick, Mo. Fourteen pecans received honorable mention.

Total of 181 Meritorious Nuts

As a result of this contest we have a total of 76 black walnuts, 88 hickories and 17 northern pecans, or a grand total of 181 nuts of superior merit. The eventual contribution of this group to the lists of recommended varieties of the future is unknown, but undoubtedly some of them will become valuable sorts. The next few years will be a period of propagation, testing, and separating "the sheep from the goats." Too little is known about these nuts to warrant any recommendations to prospective planters. The most that may be said is that they seem promising and worthy of trial. Further observations may reveal serious faults in the prize winners, and some in the honorable mention class may eventually prove superior to any that received prizes.

Promising nuts were received from as far south as Alabama and as far north

(Continued on page 30)

COMMERCIAL BLUEBERRY CULTURE

(Continued from page 9)

century, the U.S.D.A. realized that the wild blueberry crop would gradually diminish and decided to start some investigational work with reference to learning the requirements of growing the blueberry under cultivation and selecting varieties bearing larger fruit. Dr. F. V. Coville started work on this problem in 1908 and his results regarding the soil requirements of the blueberry plant and in producing varieties of blueberries bearing exceptionally large fruit laid the foundation for the cultivation of the blueberry.

Another pioneer in the development of the blueberry was Miss Elizabeth White of Whitesbog, N. J. Miss White offered cash prizes to pickers who were picking wild blueberries for all plants that they could find which produced berries a half-inch or greater in diameter. She secured several wild selections of merit in this way. Of these, the variety named Rubel, is one of the most important varieties now being grown under cultivation.

Among the state experiment stations working on problems associated with the cultivation of the blueberry are New Jersey, Massachusetts, Maine, Florida, Mississippi, Washington and Michigan.

The Michigan Experiment Station has been conducting experiments in blueberry culture at its South Haven station since 1923. These investigations have included various cultural practices, such as cultivation, fertilization and pruning. Particular attention has been paid to the problem of propagation, as the blueberry has been considered rather difficult to propagate. This, together with the limited amount of propagating wood of the improved varieties, has resulted in an insufficient supply of plants to meet all requirements, with resultant high prices. Very good progress has been made in developing successful methods of propagation and plants should gradually become more available in greater numbers and at lower prices.

The improved varieties of blueberries are much larger than the ordinary wild berries. The selected varieties under good care will produce berries about one-half inch in diameter during the first pickings. Many specimens will measure three-fourths of an inch in diameter. The fruit is of fine appearance, keeps and ships well. In fact, blueberries will ship better than any of the other small fruits, with the possible exception of gooseberries. Successful experimental shipments of improved varieties of blueberries have been made to New York City, Houston, Texas, and to California. There is some variation in the quality of the improved varieties, as is the case with different individual wild plants, some being rather mild and others a little tart. In general, the flesh is firmer and somewhat drier than the ordinary wild berries.

The early history of blueberry culture is plentifully supplied with instances of failure due to a lack of knowledge concerning the plant's soil requirements. Dr. Coville first showed that the blueberry plant is very sensitive to soil conditions. His work showed that the blueberry plant requires an acid soil, and that plants set on an alkaline or neutral soil make very little growth and many of them die. Not only must the soil be acid but it must be *very acid*. Experiments have shown that plants growing on what is usually considered a rather acid soil for ordinary crops were stunted in growth and very low in production.

The amount of moisture in the soil is another important factor in the growth and production of the high-bush blueberry. Experiments have shown that a water level in the soil, during the spring months at least, of from 14 to 22 inches gives the best results. Blueberry plants will survive a flooded soil in the dormant season but if too much water is present after active root growth starts the plants are liable to be injured, and, if the excess water is present for too long a time, the plants may die. Too little moisture, on the other hand, results in a smaller growth and decidedly low yields. If sufficient moisture is not available the plants will fail to produce any fruit buds. A very great deficiency in moisture may also result in the death of the plants.

Dr. Coville's original experiments showed that blueberry plants did not do well on clay soils. Blueberries are practically always found growing in peat or sand soils. The blueberry plant seems to prefer an open, porous type of soil. Clay soils, besides being fine and compact, are usually alkaline or at least not very acid. While it is possible that blueberries might grow fairly well on some clay loam soils, provided they were sufficiently acid, it would be safer to use peat and sand soils that are known to be adapted to blueberry culture.

In general, blueberry plants require about the same care as other small fruits. A planting distance of 10 by

four feet is recommended. The plants should be cultivated and hoed often enough to keep down weed growth until early in August when a cover crop of oats should be sown. Blueberries are very shallow rooted and therefore shallow cultivation is necessary.

Fertilizer experiments have shown that the plants will respond to fertilizers containing phosphorus and potash. No response has been obtained from the use of nitrogen on sandy soils well supplied with organic matter. Probably no response will be obtained from nitrogen on peat soils. Some response will be obtained from the use of nitrogen on light, sandy soils. It is interesting to note that blueberries respond to phosphorus and potash while our other fruit plants have usually responded to nothing but nitrogen.

Highbush blueberry plants will not require pruning until about the fourth year. From that time on the oldest and smallest wood will have to be removed annually to prevent too heavy production and consequently smaller fruit. No spraying is required at present.

The picking season usually lasts about 40 days. The berries hang on the bushes exceptionally well after maturity so that it is not necessary to pick as frequently as is required with most small fruits. Picking once each week is usually often enough.

The berries are picked carefully and all sticks, sand and other such material removed. The average picker will pick from 30 to 40 quarts of cultivated blueberries in a day of eight hours. The picking cost averages between five and six cents a quart.

Records of the improved varieties growing on a very good Michigan site show that the following yields were obtained.

Second year	25 quarts per acre
Third year	100 quarts per acre
Fourth year	1,000 quarts per acre
Fifth year	2,000 quarts per acre
Sixth year	3,000 quarts per acre

Blueberries require from eight to 10 years to reach full production. The plants are very long-lived; some are known to be over 75 years of age. Plantations located on good soil, well protected from frost and properly managed should ultimately yield between 3,000 and 4,000 quarts per acre. The average yield of a large number of plantations, growing under a wide range of conditions, will naturally be smaller.

The fruit of the improved varieties of blueberries usually sells for slightly more than double the amount received for ordinary wild berries. It must be remembered, however, that only a comparatively small quantity of the improved blueberries are being offered for sale at the present time. When production becomes heavier, prices will naturally go down. Even at a somewhat lower price, blueberry culture, under proper conditions, should provide a satisfactory return on the capital and labor invested.

Scattered throughout southern Michigan and other areas are many native highbush blueberry swamps. In general these have been very much neglected. At least nothing more has been done to them than to remove some of the competing trees and shrubs. Five years of experimental work on methods of improving these wild blueberry areas have given some valuable results. It has been demonstrated that wild blueberry swamps can be made to yield considerably better by the following program:

1. The removal of competing trees and shrubs.

2. Pruning the blueberry plants by removing all dead and weak wood and thinning out to some extent where the growth is too thick.

3. The application of about 350 pounds of acid phosphate and 125 pounds of sulphate of potash per acre. This should be applied in late winter or early spring and broadcast underneath and between the bushes.

The cultivation of the highbush blueberry is only in its infancy but it offers an opportunity to utilize certain areas of land unsuited for other agricultural crops. There is no overproduction of blueberries at the present time, and a good market is available at fair prices.

Macoun Apple Attracting Favorable Attention

ONE of the most promising new varieties of apples is the Macoun. To produce it, Jersey Black, a highly colored apple of inferior quality, was crossed with the high quality McIntosh in order to secure a more highly colored, well-flavored fruit. One of the resulting seedlings possessed just such a combination of characters and was introduced by the New York Fruit Testing Association. This variety ripens later than McIntosh and has a distinctive high quality.

Kendall, the result of a cross between McIntosh and Zusoff Winter, is also attracting considerable attention.

STATE NEWS

(Continued from page 16)

importance. The society has co-operated in the closest possible way with the American Pomological Society and the Eastern Apple Growers' Council in taking definite stands against any proposals which appeared to be retarding the progress of the fruit industry.

Initial steps have been taken to investigate the most likely meeting place for a large machinery and fruit educational exhibit for the next annual meeting. The membership expressed a desire for such a meeting and if the decision is made soon to arrange for it, negotiations will be started in an effort to make it a big event in the history of Indiana horticulture.

EVERETT WRIGHT, *Sec'y*,
Lafayette.

S. D. Hort. Meeting

THE winter meeting of the South Dakota State Horticultural Society was held at Vermillion, January 15 and 16. F. X. Wallner, Sioux Falls, was elected president; George W. Gurney, Yankton, vice-president; W. A. Simmons, Sioux Falls, secretary and editor; H. N. Dybvig, Colton, treasurer; and Charles McCaffree, Canova, librarian.

The summer meeting will be held July 18 and 19, at Hot Springs. A memorial will be dedicated to John S. Robertson, fruit grower at Hot Springs. Mr. Robertson has operated a large orchard for many years and is considered the best authority in South Dakota on fruit varieties. He has written many articles for horticultural magazines and farm papers, and for many years served as president and vice-president of the horticultural society.

R. W. VANCE,
Pierre.

Washington News

A NORMAL or slightly later than normal season appears to be the condition in Washington. At present the fruit trees are at least two weeks later in development than last year. This condition is aiding the fruit growers to get their spring work done with a minimum of outside labor. At least one spray for the first brood of codling moth has also been saved by the delayed season.

Growers are anxiously awaiting the outcome of the seed or crop loan bill now before the Senate. Very little progress has been made in the matter of debt adjustment in the Wenatchee Valley, although Yakima has gone far in this line. The average grower has but little chance to finance through the government PCA setup and must look for emergency money from some source.

Something new in the line of spraying information will at least be tried in the Wenatchee-Okanogan district this year. A committee representing federal, state and county agencies will meet and recommend uniform spray programs. The Dormant Spray Bulletin is just out. Oil as a dormant spray is generally recommended when the codling moth problem is severe and summer oil is required early in the first brood. In orchards where the two-spotted mite is equally as important as codling moth, lime-sulphur dormant is recommended.

(Continued on page 30)

EVERY GROWER'S PAGE

Conducted By T. J. TALBERT

TOP GRAFTING FRUIT TREES

THE cleft method of grafting is often used to change the variety of apple, pear or quince trees. The method may also be fairly successful on cherry, plum and nut trees. A large portion of the entire top of trees up to about 10 years of age is sawed off and well located scaffold branches are all grafted at one operation. With apple trees older than this, it is often well to cleft graft no more than about one-half the top in one season. In from five to seven years, top-worked trees should develop about as much fruiting wood as ungrafted trees, and can bear a normal crop.

The grafting operation consists of sawing off the limb, leaving a stub to be grafted. This stub is split with a heavy knife and maul. The cleft or split is made about two or three inches deep. The knife is then removed and placed in the center of the cleft to spread it for receiving the scions. If the stub is large, two wedge-shaped scions may be used, one in each side of the split. A wedge may also be needed in the center of large stubs to relieve the pressure of the scions.

It is important that the scions be so placed that the inner bark of one side makes an exact union with the inner bark or cambium of the stub, otherwise growth will not occur. Scions containing from three to five buds each, about four to five inches long and about the size of a lead pencil are prepared by making long, sloping cuts from one and one-half to two inches in length on both sides of the lower ends. The wedge-shaped scions are then ready for insertion in the split of the stub.

After the scions are in place, all wounded surfaces should be thoroughly and completely covered with grafting wax. The wax should not be disturbed and new applications, if needed, should be made from time to time. In hot weather, a paper bag may be placed over the cleft graft and waxed surfaces and tied around the stock to lessen evaporation. In about a week to 10 days, growth should start and the sack can be removed.

Mature apple tree top-worked, showing branches left to nourish the tree until the grafts become established.

No Crown Gall Danger—Immune Purple Raspberry

Would it be advisable to set strawberries on ground from which I have just dug raspberries that were affected with crown gall?

I have a new purple raspberry that seems to be immune to crown gall. It does not sucker and is practically thornless, with long canes. I wish some enterprising nurseryman would propagate it.—M. E. R., Nebraska.

STRAWBERRIES may be set on the ground where raspberries have grown without any danger of crown gall developing on the strawberries.

What you say regarding the purple raspberry is very interesting, and if you will bring these facts to the attention of some nurserymen, you might find one or more interested in purchasing and propagating the plants.

Spray Formula for Evergreens

Could you kindly tell me a good formula for spraying blue spruce and evergreens? This is for a general spray for pines and all evergreens.—P.F., Wisconsin.

A GOOD formula for spraying blue spruce and evergreen trees in order to destroy the red spider and any other sucking insects that may be present consists of about a three per cent oil emulsion; in other words use about one gallon of the oil emulsion to 50 gallons of water. It is important that the application be made very thoroughly; otherwise the spray is not likely to be effective.

Orchard Spacing and Power Equipment

This spring I am going to set eight acres to apple trees. I have selected the best site on our farm but even on this site there are a few knolls where the crumbled limestone comes to the surface. It appears to me that these particular trees would benefit more by applying a heavy straw mulch in place of cultivation.

As I have the orchard laid out on paper, there would be a 20-foot space between the last row of trees and the fence, just about right with the distance I have planned for spacing my trees (35 feet hexagonal method). Would this be sufficient to enable one to make the turn with the tractor and springtooth harrow or disk?—G. P., Wisconsin.

IT IS possible that your land for the eight acres of orchard which you plan to plant will prove satisfactory. If, however, solid rock is found within a foot or so of the surface of the soil, this would not be satisfactory land for the planting of trees. Trees on such land might prove fairly good growers for a few years but at the time of bearing and when root penetration of the soil reached its maximum amount, the trees in all probability would dwindle and prove entirely unsatisfactory and usually would be of short life.

For the operation of a tractor in the orchard, it is believed that you should have about 30 feet between the first row of trees and the outside fence. It is true, however, that a caterpillar tractor can be operated without difficulty in a 20-foot space.

The distance between the rows of trees, 35 feet, should prove satisfactory for the operation of the tractor, springtooth harrow, and disk. Moreover, you should have no difficulty in performing other orchard operations, such as spraying, cultivating, and the like.

Fertilizing and Irrigating

Do you think that barnyard manure applied to fruit trees in the fall is the proper thing? My trees are eight years old and on a sandy loam soil. Am putting in an irrigation plant to water trees. When is the best time to water, and how often?—W.J.M., Texas.

IN our opinion, applications of manure made at almost any time to the soil of your eight-year-old apple orchard will bring profitable results. This is particularly true since you state that the soil is more or less of a sandy loam. The manure should not only increase the growth of the trees but should help them by increasing the water-holding capacity of the soil.

Irrigation will be most needed during the spring and early summer months. Perhaps the soil should be irrigated once every two or three weeks from about April 1 to July 15 or August 1. It is also possible that one or two irrigations during the fall or early winter may be needed.

From Vale of Cashmere Comes A New Use for Apples

THOUSANDS of people this summer will motor into the State of Washington, through the Wenatchee Valley, famous for its pulchritudinous apples, and up into the tiny Vale of Cashmere; tucked among the foothills of the Cascade Mountains. Resting in the Vale, these happy visitors will be torn by conflicting emotions—their delight at the panorama of beauty spread before their eyes, and their delight also at the palate-tickling deliciousness of a new kind of confection that claims the Vale as its birthplace.

Just enough mystery shrouds the origin of this unique candy—a confection that is as delicious as it is *different*—to add to its fascination. It is sufficient to say, however, that someone had an idea, and in a small aluminum kettle, in a small home on the side of a hill, a series of experiments followed one another. In due time, Aplets, "The Confection of the Fairies," was evolved.

If you were in Boston, Mass., today, you would see, at the highest class grocery stores of S. S. Pierce Company, girls slipping wee boxes of Aplets into the fancy Bon Voyage baskets prepared by that famous firm. You would see the same thing being done in New York and in Los Angeles.

If you should visit Marshall Field's in Chicago, or Hamiltons' in San Diego, the Emporium in San Francisco, Halliburton Abbotts in Oklahoma City, Meier & Frank in Portland, and, such stores as Frederick and Nelson, Bon Marche, Rhodes Brothers, in Seattle, the Crescent in Spokane, Rumbaugh's in Everett, Fishers Company and Peoples Store in Tacoma, you would find Aplets enticing gift shoppers.

Aplets are different—and amid many superlatives, that is really the best description of them.

The Aplets factory of the Liberty Orchards Company at Cashmere, Wash., is a Mecca for tourists. During the summer months, you see cars bearing licenses of practically every state in the Union.

The Aplets factory has been visited by a President of the United States and by other notables. Even the special train of Queen Marie of Roumania stopped there so that she could accept a special box of Aplets, put up in a royal box.

Some time ago, a little town in Saskatchewan, Canada, wanted to show their appreciation to H.R.H., the Prince of Wales, on the anniver-

(Continued on page 30)

OPPORTUNITY ADS

Only 15c a Word—CASH WITH ORDERS

ADDRESS: AMERICAN FRUIT GROWER, 1370 Ontario Street, Cleveland, Ohio

BASKET TURNERS

DON'T BRUISE YOUR PEACHES. USE COWL Basket Turner. Gives solid pack minus Rim Cuts. Bench style $12.50 plus parcel post. Conveyor style fits your conveyor. FRUIT PACKING EQUIPMENT COMPANY, INC., Swoope, Virginia.

BEES

THREE BAND ITALIAN QUEENS AND BEES. WRITE for prices on what you want. D. C. JACKSON, Funston, Georgia.

DAIRY GOATS

DAIRY GOAT JOURNAL, DEPT. 21, FAIRBURY, Nebr. Monthly Magazine. 25c yearly; 5 months 10c.

DAIRY STOCK

FOR PRACTICALLY PURE HOLSTEIN AND GUERNsey calves, write EDGEWOOD DAIRY FARMS, B-15, Whitewater, Wisconsin.

FRUIT GROWERS' SUPPLIES

WE MANUFACTURE TREE BANDS, LADDERS, BASkets, etc. We also sell spray hose, guns and insecticides. JOHN BACON, INC., Gasport, New York.

GRAFTING COMPOUND—WOUND DRESSING

TREE-SEAL, ASPHALTIC GRAFTING COMPOUND and wound dressing. Applied cold. Economical. FOREST PRODUCTS COMPANY, Box 82, South Euclid, Ohio.

IRRIGATION

FOR SALE: QUANTITY OF USED IRRIGATION equipment. Write CARROLL M. MARCH, Muskegon Heights, Michigan.

LIGHT PLANTS

CHANGE AUTOMOBILE GENERATOR TO 110 VOLTS for farm lighting, easily changed; build water wheel plant; wind charger; battery soldering iron; other items. 25c (coin) brings all diagrams. LeJAY MANUFACTURING, 3463 Hennepin, Minneapolis, Minnesota.

MONUMENTS

$9.90 UP FREIGHT PAID. BEAUTIFUL GRAVE markers and monuments. Lettered. Guaranteed. Write for catalogue. GRANITE ARTS, INC., 202 Graniteway, Omaha, Nebraska.

NURSERY STOCK

NUT TREES—PLANT OUR GRAFTED WALNUT AND pecan trees of giant thin shell varieties. Early and prolific bearing mean big profit. Catalog free. MICHIGAN NUT NURSERY, Box 231D, Union City, Michigan.

PATENTS

PATENTS—SEND ME SKETCH, PICTURE OR MODEL of your new invention. I will give you prompt report on its probable patentability based on a search of the patent records for a small charge.
PLANTS, BUSHES, TREES, VINES, etc., can now be protected by Patents. I can furnish copies of any or all plant patents issued to date.

GEORGE E. COOK
Registered Patent Attorney
International Bldg., 1319 F Street Washington, D. C.

JAMES ATKINS
Registered Patent Attorney
Munsey Building Washington, D. C.
Inventions patented. Trade-marks and copyrights registered
Correspondence solicited

OUR MANUFACTURER-CLIENTS NOW WANT ADditional improved inventions, patented or unpatented. What have you? CHARTERED INSTITUTE, Dept. 58, Barrister Building, Washington, D. C.

PHOTO FINISHING

ROLLS DEVELOPED. TWO BEAUTIFUL DOUBLEweight professional enlargements and eight guaranteed Never-Fade Perfect Tone Prints. 25c coin. RAYS PHOTO SERVICE, La Crosse, Wisconsin.

ONE DAY SERVICE. ROLLS DEVELOPED AND PRINTED, 25c coin. Beautiful permatone prints, two enlargements. Acme Developing Studio, Box 3576-Z, St. Paul, Minnesota.

FILMS DEVELOPED ANY SIZE, 25c COIN, INCLUDing two enlargements. CENTURY PHOTO SERVICE, Box 829, La Crosse, Wis.

TWO PROFESSIONAL DOUBLE WEIGHT ENLARGEments and eight guaranteed prints. 25c. MAYS PHOTO SHOP, LaCrosse, Wisconsin.

EIGHT GUARANTEED PRINTS AND TWO PROFESsional double weight enlargements. 25c. PERFECT FILM SERVICE, LaCrosse, Wisconsin.

PLANTS

FROST-PROOF CABBAGE, EACH BUNCH FIFTY, mossed, labeled variety name, Jersey Wakefield, Charleston Wakefield, Succession, Copenhagen, Early and Late Dutch. Postpaid: 200, 65c; 300, 75c; 500, $1.10; 1,000, $1.75. Onions Crystal Wax, Yellow Bermuda, Prizetaker, Postpaid: 500, 60c; 1,000, $1.00; 6,000, $4.00. Tomato large, well rooted, open field grown, mossed, labeled with variety name. Livingston Globe, Marglobe, Stone, Baltimore, June Pink, McGee, Earliana, Gulf State Market, Early Detroit, Postpaid: 100, 50c; 200, 75c; 300, $1.00; 500, $1.50; 1,000, $2.50. Pepper mossed and labeled, Chinese Giant, Bull Nose, Ruby King, Red Cayenne, Postpaid: 100, 75c; 200, $1.00; 500, $2.00; 1,000, $3.50. Full count, prompt shipment, safe arrival, satisfaction guaranteed. UNION PLANT COMPANY, Texarkana, Arkansas.

GOOD SERVICE AND QUALITY PLANTS THAT WILL produce real crops. Cabbage, $1.00; onion, 70c; tomato, $1.25; pepper, $2.00 per thousand. FARMERS EXCHANGE, Waldo, Florida.

CABBAGE, ONION, TOMATO, PEPPER PLANTS. IF you are interested in dependable quality and service wholesale, write CRESCENT FARMS, Sumner, Georgia.

GENUINE NANCY HALL SWEET POTATO PLANTS. Postpaid 600, $1.00; 1,000, $1.50. AVERY ALLMON, Gleason, Tennessee.

POROUS HOSE IRRIGATING

WRITE ABOUT POROUS HOSE IRRIGATING. B. & B. IRRIGATING SYSTEM, Port Clinton, Ohio.

POSITIONS WANTED

HORTICULTURE STUDENTS AND GRADUATES available for work in all lines of the profession—both summer and permanent. If interested, write to ROGER DICKINSON, Horticulture Club, Iowa State College, Ames, Iowa.

TOBACCO

"GOLDEN HEART" TENNESSEE'S FINEST MELLOW Natural Leaf. 10 pounds Smoking or Chewing, $1.50. Box Twist Free. GOLDEN HEART FARMS, Paris, Tennessee.

TREE HEALANT—GRAFTING WAX

GRAFTWAX, ARRESTS AND CURES BACTERIAL and parasitic tree diseases and tree wounds. Use cold or melted. Water proof, elastic, adhesive. Particularly successful in grafting, hastens union. ¾ pound 50 cents; 2 pounds $1.00; 6 pounds $3.00; 12 pounds $4.80, postpaid. Prices to Foreign Countries subject to transportation costs. CLARION DEVELOPMENT COMPANY, INC., (A) Clarion, Pennsylvania.

TREE SCRAPERS

BE READY FOR TREE BANDS. USE COWL THREE Edge Tree Scraper. Finishes job in half time. Price $1.45 delivered. FRUIT PACKING EQUIPMENT COMPANY, INC., Swoope, Virginia.

From Vale of Cashmere Comes a New Use for Apples

(Continued from page 29)

sary of his visit to their town, and selected as a gift a specially made up box of Aplets, and sent it to His Highness on that occasion. And only recently, another special box of this unique confection was welcomed by Mrs. Roosevelt in the White House in Washington.

The allure of Aplets is making the bright, shiny, white-enameled factory in Cashmere world-famous. This confection is also adding prestige to the fruit industry of America by placing added emphasis upon its aggressiveness and its importance. Candy from apples. Put on your own thinking cap and perhaps, you, too will think of some new, wonderful and desirable way of using fruit or fruit products.

STATE NEWS

(Continued from page 27)

Plans are already under way to celebrate the 1935 Apple Blossom Festival at Wenatchee. Jean Marlowe, Wenatchee high school girl, has been chosen as queen for the affair.

W. A. LUCE,
Wenatchee.

Tenn. Horticulture Group Meets

TENNESSEE fruit growers gained much valuable information at the recent annual meeting of their State horticultural society. The sessions were characterized as the most successful in many years.

Strawberry production was discussed by Dr. George M. Darrow, senior pomologist of the U.S.D.A. Dr. Darrow emphasized the necessity of spacing Blakemore strawberry plants in the matted row if high production and large berries are to be obtained. His data proved that plants spaced eight to 10 inches apart produced more per acre than closer set plants.

L. F. Steiner of the U. S. Bureau of Entomology, Vincennes, Ind., emphasized the necessity of thorough spraying, together with supplementary control measures such as tree banding, packing house screening and various cleanup measures for effective codling moth control.

Dr. Lee M. Hutchins of the Peach Disease and Insect Laboratory of Fort Valley, Ga., discussed the phony peach disease and demonstrated various methods of determining if the tree is actually affected with the disease.

Officers elected for the ensuing year are as follows: S. N. Varnell, president, Cleveland; T. E. Downey, vice president, east Tennessee, Sale Creek; Dr. Lucious P. Brown, vice president, middle Tennessee, Spring Hill; R. R. McUmber, vice president, west Tennessee, Greenfield; Prof. G. M. Bentley, secretary-treasurer, Knoxville.

G. M. BENTLEY, *Sec'y*,
Knoxville.

Prize Winners in Recent Nut Contest

(Continued from page 24)

as Ontario and Vermont, but more than half of the meritorious black walnuts came from the four states of Pennsylvania, New York, Indiana and Ohio. In the hickory class Pennsylvania and New York were far ahead of the field, contributing 50 in a total of 88 meritorious nuts. Illinois contributed 12 in a total of 17 promising pecans, 10 of which came from the town of New Haven, Ill.

Dr. W. C. Deming, Hartford, Conn., who has had extensive experience in the judging of nuts, was chairman of the committee which also included Dr. G. A. Zimmerman, Piketown, Pa.; Dr. J. Russell Smith, Swarthmore, Pa.; and Miss Mildred Jones, Lancaster, Pa. C. A. Reed, U. S. D. A., Washington, D. C., did a tremendous amount of work making the preliminary tests and eliminating the inferior nuts before turning the samples over to the committee for final judgment.

G. L. SLATE, *Sec'y*,
Geneva, N. Y.

CHEVROLET

Buy them at the WORLD'S LOWEST PRICES

Save on operating costs, too!

Chevrolet Trucks give maximum dependability, as well as maximum economy, because they're powered by VALVE-IN-HEAD SIX-CYLINDER ENGINES

Half-Ton Pick-Up, $465
(112" Wheelbase)

*1½-Ton Chassis and Cab, $605
(157" Wheelbase)

The most important consideration of all, in buying and operating trucks, is *economy*. And the most economical trucks on the market today are—*Chevrolet Trucks*. They sell at the world's lowest prices. They give maximum operating economy, too, because they're powered by valve-in-head six-cylinder engines. And they will *keep on* saving you money throughout long years of fine, dependable service. See your Chevrolet dealer and get the right truck for your job at the *world's lowest prices*.

CHEVROLET MOTOR CO., DETROIT, MICH.
Compare Chevrolet's low delivered prices and easy G. M. A. C. terms.
A General Motors Value

*1½-Ton Stake, $720
(157" Wheelbase)

*1½-Ton Platform, $630
(131" Wheelbase)

*Above are list prices of commercial cars at Flint, Mich. Special equipment extra. *Dual wheels and tires $20 extra. Prices subject to change without notice.*

CHEVROLET TRUCKS